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# CURRENT NOTES

The Newsletter For ATARI Owners

WAACE



## REGULAR FEATURES:

Atari Scuttlebits  
Accent on Basic Computing  
Atari's Small Miracles  
Battle Bytes  
CD Report  
Music, MIDI, and You  
Singapore Sling's  
ST Update

## SPECIAL FEATURES:

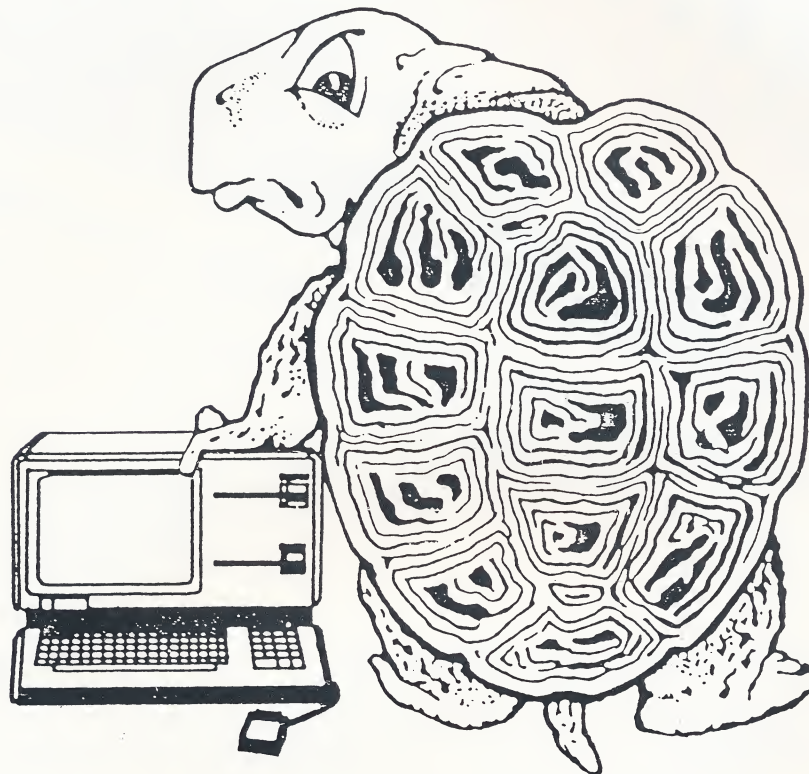
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ADVERTISING RATES: single insertion: quarter page (3.5"x4.5") \$40; third page (7"x3" or 9"x2.5") \$48; half page (3.5"x9" or 7"x4.5") \$70; full page (7"x9") \$125. Half year rates (5 issues): quarter page, \$160; third page, \$192; half page, \$280; full page, \$500. Submit photo ready copy to the managing editor by the 15th of the preceeding month. Circulation in September: 2,900 (Members 1450, Store sales 1160, Exchange 120, Other 170).

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The Managing Editor of Current Notes is Joe Waters, 122 N. Johnson Rd., Sterling, VA 22170 (703) 450-4761. Submissions of advertising copy, subscription requests or back-issue orders should be sent to the editor. Submission of ST-related articles or ST products for review should be sent to the ST Editor, Frank Sommers, 4624 Langdrum Lane, Chevy Chase, MD 20815. Submissions of XE/XL-related articles or XE products for review should be sent to the XE Editor, Jack Holtzhauer, 15017 Vista Drive, Dumfries, VA 22028. Deadline date for articles is the 12th day of the preceeding month.



## EDITORIAL

Once more I was blessed with a wealth of information to pass on. In these pages, so, perhaps against my better judgement, I once more included a wealth of pages (even so, there are still articles in the queue). There should be enough in this issue to keep everybody occupied for quite awhile. I know that putting it together keeps me occupied quite awhile. Some club members may recall that the dues were set several years ago to cover a 24-page issue. (It didn't take anywhere near as much work to put together those issues.) We have, however, gone considerably beyond 24 pages. Do you like the current format? Do you like the larger size? Are you willing to pay for it? As we approach the beginning of another year, these are issues you may want to think about.

Would you like to write an article or review for Current Notes? It certainly would be a shame to put a lot of effort into something only to find that someone else had already submitted a review. If you are planning to write about ST-related material, first contact our ST-editor, Frank Sommers, 4624 Langdrum Lane, Chevy Chase, MD 20815 (301) 656-0719. If you are planning to write about XL/XE-related material, contact our XE-editor, Jack Holtzhauer, 15017 Vista Drive, Dumfries, VA 22026 (703) 670-6475. Similarly, if you have a product you would like reviewed in these pages, see that the appropriate editor gets the copy.

If you like to go to computer fairs, you sure are going to like the next couple of months. There are two events scheduled for October. The second annual RICHMOND TECHFEST, the fall Amateur Radio and Computer Fest, is scheduled for Sunday, October 12, at the Virginia State Fairgrounds on Laburnum Avenue in Richmond, Virginia from 8:30 AM till 3:00 PM. The TECHFEST is sponsored by the Richmond Area Council of Computer Clubs and the Virginia Amateur Radio Association. Tickets are \$4.00 each or 3/\$10.00. For more info, contact Royce Overton, 8219 Tarkington Drive, Richmond, VA 23227.

Two weeks later, the Personal Computing Association at the University of Maryland is sponsoring COMPUTERFEST '86, a gathering of user groups and vendors in the Washington, D.C. area. COMPUTERFEST '86 will be at the Adele H. Stamp Union, University of Maryland, College Park, on October 25, from 9:30 am to 5:00 pm. General admission is \$6.00 (\$4.00 with the ad on this month's Inside front cover). For more info, contact the Personal

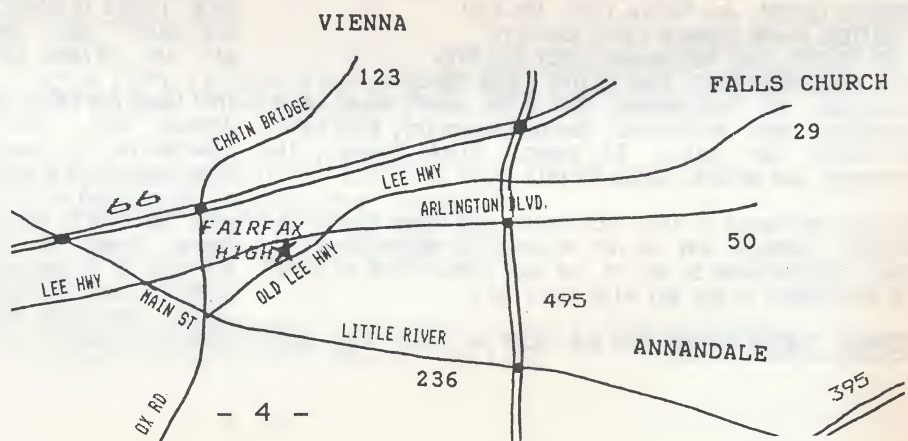
Computing Association, (301) 350-1437.

And then, finally, on Saturday, November 8, the 2nd annual ATARIFEST '86. This all Atari extravaganza, sponsored jointly by NOVATARI and the Fairfax County Office of Adult and Community Education, will run from 10:00 am to 3:00 pm at Fairfax High School. This year we are planning a variety of events. As usual, there will be wide variety of local merchants as well as some national Atari software and hardware vendors to show you all the latest and greatest in Atari computers and equipment. The individual WAACE clubs are joining together to sponsor a number of seminar and demonstration rooms where you can learn more about your favorite programs or see new wonders demonstrated. We are also hoping to have a guest speaker on hand to kick off the proceedings. As last year, admission will be free and we will have plenty of door prizes. NOVATARI, for example, is offering a 1200-baud modem, Progressive Computer Applications is offering a copy of the GRAPHICS ARTIST, and MichTron is offering a two copies of TIME BANDITS.

Since this is sponsored, in part, by the local clubs, everyone will have a chance to help and participate. And rest assured plenty of help will be needed. If you see a place where you can contribute, please give one of the chairman below a call! Bill Parker (703-680-3041) of WACUG is coordinating the XL/XE rooms and Joe Kuffner (703-759-2507) of VAST is coordinating the ST rooms. On the 8-bit side, individual room chairmen include Dave Meyer (703-455-7145), the Game Room; Jim Stevenson (703-378-4093), Languages; AURA -- John Barnes (301-652-0667), Productivity and Word Processing; FACE -- Mike Kerwin (301-845-4477), Voice Synthesis. More room sponsors are needed -- contact Bill Parker! On the ST-side: Ken Whitesell (301-636-4756), Languages; Mike Lehr (703-931-9947), MIDI; John Begay, Games; and Dorothy Hood, Productivity. Joe needs more room chairman and lots of volunteers. A Telecommunications Room, chaired by Gary Purinton (703-476-8391) will have both 8-bit and 16-bit displays.

If you would like to have a booth at the Atarifest, contact Palmer Pyle (703-437-3883) and if you would like to help out with tickets and door prizes, contact Don Elmore (703-444-9053). This is our fair, let's all chip in and make it a success!

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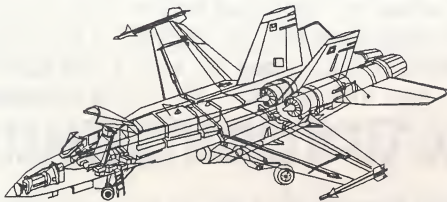
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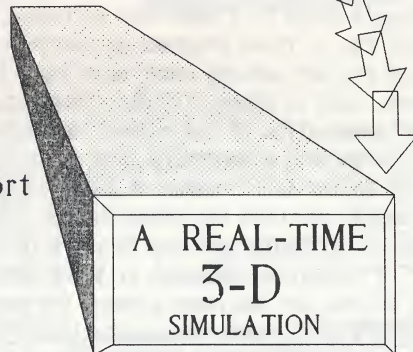


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## Atari Scuttlebits

*by Bob Kelly*

As promised, I will devote this column to concluding our analysis of the Current Notes reader survey. Compilation of the data uncovered an assortment of interesting information but only limited space is available to relate the implications. So, I will waste no more paper - let's go.

Frequently, the subject of piracy receives attention in the national computer magazines. This survey was meant to determine, if possible, the nature and extent of piracy within the Atari community. A number of the questions posed in the survey were designed to obtain a general feel for this issue. We asked individuals to tell us: the total number of disks in their library, annual income, amount of money spent monthly on software, and where they obtain their software (local store, mail order or friend). The results are quite revealing. First of all, more than 50% of all the respondents have at least 100 disks in their personal library. Now, the theory is to correlate number of disks with income levels (the higher the annual income, the more commercial programs an individual is likely to own). Say, for example, an individual had 500 disks and was either a student or made less than \$20,000 per year, one could safely say he was involved in pirating to some degree.

Upon examining the data, only seven (7) individuals who made less than \$20,000 or were a student had more than 100 disks in their library. None of these individuals had more than 250 disks. (The highest number of disks owned by any one person in the survey was 2000.) No doubt, the seven individuals pirated but I would guess it was rather selective.

Another way to probe at this issue is to examine average monthly expenditure for software. Roughly 30% of the respondents indicated they spend \$50 or more per month on software. My experience from other expenditure surveys is that the consumer tends to underestimate his monthly expenditure. In any event, the fact that individuals spend this amount on software, equal to the price of two or three programs per month, is significant given we are not talking about mainline business software, such as dBase III, etc. However, a more careful examination of the numbers indicates that, for many, the monthly expenditure rate is excessively low in relation to the total number of disks in their library. For example, you have 500 disks in your library and spend \$50/month. It would take you 20 years to accumulate this number of commercial programs at \$25/program. Those who appear to have an imbalance between the number of disks and dollars spent constitute approximately one out of every three respondents. Finally, about 11% indicated that the MAIN source for program acquisitions was a friend. More people responded honestly to this question than I expected.

In sum, the survey results appear to indicate that a substantial proportion of Atari owners, maybe as high as 40%, have fattened their disk collections through pirating. On the other hand, the remainder appear not to have adopted this practice. It really appears to be a situation where there is no "gray area".

As noted in the July column, 65% of those who responded to the survey own a modem. Approximately 70% of the modem owners have a 300 baud device. What is perhaps more interesting is that almost one out of every three modem owners make less than 5 calls per month for business and pleasure combined. This is strange - to say the least, a totally unexpected result. This behavioral pattern could be the result of the slow speed of many existing modems, lack of available bulletin boards, difficulty of accessing their telephone for a long period, or owners may feel insecure with respect to the operation of the modem. I tend towards the latter two explanations. Despite this lack of use, fully one third of all respondents plan to purchase a modem. Of course, many intend to replace their existing 300 baud with 1200 or 2400 baud modems but fully one half of those planning to purchase a modem have NONE at present. I still am of the opinion that if Atari comes out with a 1200 baud modem it will meet with success. But in the intervening period, other low cost modems have taken some of Atari's potential market share (e.g. Avatex). Delay is costly.

What Atari hardware and software are people planning to buy? This was one of the major reasons for undertaking this survey. Approximately 42% of all the individuals who responded plan to buy either a 520 or 1040 ST. Further, over 80% of these individuals plan to buy a hard drive! This is amazing since hard drives were not yet on the market at the time of the survey (especially when considering the retail price which was known at the time). Somehow, the magnitude of the response to hard drives seems more like youthful enthusiasm. I can't help but think it will fade in later life unless the price falls significantly. About 8% of the total respondents indicated they plan to buy a 130XE. More than half of all respondents indicated they intend to purchase at least another drive in the future. As for printers, about one quarter of the respondents indicated they intend to purchase a printer in the near future. Roughly 45% stated that they would purchase an Epson while 40% were divided equally between purchasing a Star Micronics or Panasonic. Thus, there (3) manufacturers cover 85% of the Atari market.

Almost everyone indicated that price was the primary influence upon their initial decision to purchase an Atari. Next was the performance factor. The influence of a salesman or friend seems to have hardly mattered.



What Atari computer magazines do our readers prefer? Analog and Antic ended in a virtual dead heat. 85% of those who responded to this question subscribe to either Analog or Antic, the remainder chose either Current Notes or Computer! as their number one magazine. The selection of Current Notes, which received more nominations than Computer!, was surprising given that even I did NOT think of Current Notes as a MAGAZINE. Commercial Interruption ..... on behalf of the management of Current Notes, we thank you for your support. Who knows, maybe someday we will grow up.

For those involved with computers at work, more than 38% use an IBM computer in one form or another. A few individuals even indicated they work with the Cray super computer. The range and extent of member interaction with sophisticated computers was surprising - over 46% deal with minis or mainframes in their work environment. The Apple/Macintosh and AT&T computers are also runs in the business market according to the survey results. As for software, there are no surprises. Lotus 1,2,3 and dBase III are the favorites - a virtual tie for first place. WordStar remains the number one word processing program with Word Perfect the runner-up. Owing to the large number of members who interact with mini or main frame computers, the number of respondents actually using the more popular commercial software programs was far less than expected. Simply put, the results of the survey indicate that many of our members are connected

with the computer industry rather than just using computers at work.

The favorite language, and by an overwhelming margin, is Basic. Not surprising! Of those who responded to this question, roughly 80% preferred Basic. As for the new languages people wish to learn, the winning choice (2 1/2 to 1 margin) was "C", with Assembly Language and Pascal second. In fourth place was ACTION. Atari, please note, almost no one indicated they wish to learn Logo.

The favorite local store was L & Y Electronics by almost a ratio of 4 to 1. In second place was ACA which, as they intensify their local sales efforts, will receive greater user recognition. The favorite mail order firms in rank order (all were closely grouped) are: Black Patch, Lyco Computers, Software Discounters of America, and Computer Mailorder.

That's it for now, if you have any comments on the survey results, let me know. Write to Bob Kelly, 8309 Bella Vista Terrace, Ft. Washington, MD 20744. See you next month when we will take a look at some of the more interesting current market developments and a few concluding remarks on the survey.

[Editor's Note: Bob Kelly is the Senior Economist for the Natural Gas Research Institute in Washington, D.C.]

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## Accent on Basic Computing

*by Ron Peters*

Last month we discussed floppy disks and how data is stored on them. This month we'll talk about another subject that everyone throws around like confetti at a football game — databases.

A database is nothing more than a collection of information, stored on the computer in a logical format so that any part of the information can be easily retrieved.

We can liken a database to a file cabinet. The file cabinet drawer opens to reveal a number of file folders. In each file folder might be a number of documents containing names, addresses, and other pertinent information on the subject.

A database is just an electronic file cabinet, with a built-in secretary that will get any information you request in short order.

Let's compare the two. The database program is the file cabinet with a secretary thrown in (not literally — there are laws against stuffing your secretary into a file cabinet, as much as you may be tempted to do so at times). Each file drawer contains information about a different subject, which most people label so they can get to the right subject without crashing around opening and closing several drawers. This is an attention getter, though.

The file folders in each file drawer are called records in the database, and specific information in each folder are called fields. Thus,

file cabinet	=	database program
file drawer	=	filename
file folder	=	record
documents	=	field

Inside the cabinet drawer you have a bunch of file folders (records) that contain separate information on the subject. Thus, one file folder might contain info on the ABC Company, the next folder info on the DEF Company, etc.

If you pick out a folder and look inside, you will find (for example) the name, address, telephone number, and owner of the ABC Company. Other pieces of paper in the folder might contain info about the company size, its products, credit history, etc. Each one of these bits of information are stored in fields on the database, with each field labeled.

In the example above, each record would look like this:

name field:	ABC Company
street field:	123 Monotonous Road
city field:	Dudsville
state field:	North Slope
zip field:	00123
owner field:	Harold R. Rottenbottom
	etc.

New here comes the Secretary, slightly ruffled from being stuffed in the top drawer of the file cabinet. You ask her to go to the company file, pull the folder on the ABC Company, and give you the name of the owner. Or, you might ask her to list all the companies in alphabetical order. Or you might want a listing of all the companies in a particular state.

Good ol' trusty Petunia (she deserves a name at least) trudges off to the file cabinet and begins the lengthy job of pulling the information you've requested and putting it in the correct order. Once Petunia has finished, she sits down behind her manual typewriter (you're too cheap to buy her an electric one) and punches the information onto a piece of paper.

Now a good database program will do all that for you electronically, and print out the information to your dot-matrix or letter quality printer. And, it will do it before Petunia can even reach the file cabinet.

Next month . . . we'll see how DOS and Petunia are alike (that gal really gets around!)

### Glossary of Terms

Database: An electronic filing system.

Secretary: An underpaid, unappreciated person that does all the work and lets the boss take all the credit.

\* \* \* \* \*

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PRINT SHOP TRIVIA*By Michael Pollak*

Did you know that you can boot Print Shop Graphics disks #2 and #3? You didn't? Well, you can! Put one of these disks in your drive and boot your Atari without BASIC and you will see a screen telling you about Broderbund. You will not see any message, hint, and other clue as to what to do next. Nor will you read any Broderbund documentation that you could even boot these disks. What you must do next is hit the <U> key on the computer. This will bring up a new screen, load 12 sectors off the disk, and ask you to Insert your master Print Shop disk into drive #1 with the write protect tab removed. When you then hit the <RETURN> key, it will verify that you have the master Print Shop disk (side A) in the drive and then the 12 new sectors will be written to your Print Shop disk. You now have an upgraded disk.

Well, what does this do for you? Probably not much unless you have Turbo GT or an ATARI 850 Interface. This modification is intended to fix earlier problems with these, and Broderbund did not tell anyone unless you did. Indeed have one and call and ask for help. Whereupon, you would be most graciously informed that they had already fixed the problem and you need only boot the Graphics disk(s) to fix the original product. What if you did not happen to have a Print Shop Graphics disk #2 or #3? I don't know. Hopefully you would buy one or know someone who had one and would let you borrow it.

Now, are you wondering how any human being could possibly discover on his/her own that these disks had this little magic upgrade in it? By accident, you say! Not exactly. I had this program which I call PSICON. PSICON was supposed to dump PS icons to your Epson printer. Well, I have a Star (Gemini) and it did not work for me due to the slight difference in graphic modes in these printers. Of course, since I do not have an Epson, I was not sure the program worked on it either!

I had some trouble modifying the program to get it to work with my printer and solicited the help of Bruce Blake. He soon had the fix and also re-wrote the program to work on his "Prowriter" printer. The program would only dump pictures from 3rd party graphics disks and not from the PS Graphics Library disks. Bruce investigated the reason why the disks were different, and voila! He noticed that there were some unexplained machine language sectors on the PS Graphics Library disks #2 and #3. So he disassembled them and learned the "secret". He then called Broderbund and asked them what the modification did. They called him back a few days later and told him about the Turbo GT and the 850.

ARMUDIC now has both programs, PSICON.GEM and PSICON2 available for download. Hope you enjoy them! Anyone have an Epson and want to change the program for your printer and upload it to ARMUDIC?

MINATURE GOLF PLUS*Reviewed by Lou Praino*

Once in a while a game comes along that places itself one step above the rest. MINIATURE GOLF PLUS by David Plotkin, presented by XLENT Software, is, in my opinion, one of the chosen few.

Part one of this game set consists of a miniature golf course of 21 holes, which increase with difficulty as you progress through them. The game allows you the option of entering the players names, and the game play is similar to a real 21 hole miniature golf course, except for the fact that you can begin the game from the first hole, or any other hole of your choice.

The golf course is viewed from above, and your "golf club" is controlled by your joystick, which plugs into your #1 port. The "golf club" that you see on the screen is a shaped square, but with a notch cut out of one of its corners. This notched corner is the part of your club which should strike the ball. By changing the position of the club in relation to the ball, you can control the force of your swing as well as the angle at which the ball will travel. The game, like the real game, allows you to bounce your shot off obstacles and the holes sides-boards to achieve shots that would otherwise be impossible. The game accurately tabulates the velocity with which you struck the ball, the angle that you selected, the results of contact with any obstructions along the way, and finally -- even the effect of friction on the ball as it rolls along the course. It does this smoothly and very accurately.

Each player continues to play until he completes the hole and then the next player takes his turn until all have completed the hole. You then proceed to the next hole, and so on. The scores are shown in a window at the bottom of the screen, and by pressing the appropriate key, can be displayed either singly or all at once.

The graphics and the game play alone make this game worth the list price of \$25.99, but, as an added bonus, and to keep the game from becoming boring after you master the supplied course, David has included a Golf Course Construction Set, (hence the name "PLUS"), with this already fine package.

The Construction Set will allow you to construct a customized miniature golf course with up to 60 holes set up to your own preferences as to level of difficulty and obstacle placement. It even allows you the interesting option of installing a moving obstacle in any or all of the holes.

You can make as many customized golf courses as you want, but each must be on a separate disk. This opens the possibility of different family members as well as

(Continued on Page 13)



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## Battle Bytes

by M. Evan Brooks

### MECH BRIGADE

PUBLISHER: SSI

DESIGNER: Gary Grigsby

PRICE: \$59.95

RATING: \*\*\*1/2

MECH BRIGADE, designed by the prolific (Is there any other adjective to describe him?) Gary Grigsby, is an obvious descendant of KAMPFGRUPPE. The simulation covers tactical combat in a European scenario during the 1990's; rules, documentation and player interface are very similar to the norm established by KAMPFGRUPPE.

Yet, MECH BRIGADE is not so obvious a success. Aside from the fact that this game is derivative rather than innovative in nature, there are flaws or design choices which this reviewer feels are detrimental to the historical accuracy of the simulation.

The Airland Battle doctrine, in development since the mid-1970's, is still in a state of flux. Thus, MECH BRIGADE would appear to be a good testing ground; however, the major flaws bring its validity into question:

(1) Armor Silhouette: In all cases, NATO armor has a larger silhouette than Warsaw Pact armor. While this is true in the showroom, in the battlefield, NATO's ability to utilize hull-defilade firing positions (and the greater vertical gun traversing abilities) negate this silhouette. In MECH BRIGADE, no such mitigation occurs.

(2) ATGM (anti-tank guided missiles): The documentation states that ATGMs are 99% accurate beyond their minimum range. While this may be true, the ability of ATGMs to hit the targets and render them combat ineffective seems to be c. 15%. Suppressive fire can cause the ATGM operator to lose target acquisition; however, MECH BRIGADE renders NATO's main defensive thrust powerless.

(3) The primary teaching point about the Airland Battle is that "if the target can be seen, the target can be destroyed". MECH BRIGADE does not have the sheer lethality expected of modern weapons systems. Too many scenarios are large slugfests with many rounds expended for few hits. Either Mr. Grigsby knows something about modern warfare that the Army does not or else there is something wrong with the simulation.

(4) Auto-Deployment Routine: For those too lazy to deploy their troops, the computer will auto-deploy them in a hasty formation. It is noted that this is not optimal in the documentation; however, it should not be

as bad as it is. NATO forces can be found in clear terrain in the open, without entrenchments and requiring smoke merely to survive.

This is not to say that MECH BRIGADE is totally unsuccessful. It does allow for usage of smoke; this is a nice touch given the concealment it offers in a battlefield environment. Yet, one must remember that few US Army forces train with smoke. Most of the smoke-generating capacity of the Army rests with the Reserve, and its chances of being mobilized and moved to Europe in order to stop the Soviet assault in a timely fashion is subject to question.

Helicopter assets are nicely employed as well. One must remember that the helicopter may only be used where local air superiority is available, and MECH BRIGADE is sparing of airmobile assets. Their best missions seem to be as reconnaissance, since the non-lethality of most weapons systems give them a longer life expectancy than one would expect.

Canned scenarios are similar to KAMPFGRUPPE, with assaults and meeting engagements being present. An explanation is necessary for the first scenario -- "General Custer Rides Again" (Fulda, 8 May 1990). The Fulda Gap, one of the obvious invasion routes to central Germany (the others being the north German Plain and the Hof Gap), has been extensively surveyed, wargamed and analyzed by American Forces for forty years. The 11th Armored Cav ("Black Horse") bears the brunt of the responsibility for the initial defense.

The scenario has the cav commander ordering "take no prisoners". While somewhat humorous (or ludicrous, depending on one's point of view), the 11th Armored Cav takes its role seriously. If questioned, the officers and men therein will state that they will "take names and kick \*\*\*" of any invasion force. This macho posture is probably necessary, given that the 11th's mission is to buy time by their own destruction. And of course, in SSI's after action report, the cav commander's widow is notified. As an aside, if anyone visits Fulda on a military tour, the 11th Cav presents a diploma (suitable for framing) which states that the individual "having successfully undergone the hazards of a journey to the border of West Germany and the Communist World and visiting the Blackhorse frontiers of freedom, is hereby appointed a life-time Honorary Member of the Border Legion".

This reviewer has another reservation, which is not covered in the scope of the simulation. The T-72 tank is the Soviet frontline battle tank; yet its problems are invisible in the game. The laser system often requires the tank to stop movement in order to fire, and the



auto-loader has a disturbing tendency to attempt to shove the loader into the breech rather than the shell. These detriments should have impacted on its efficiency; it does not appear that they do.

Finally, Infantry in unimproved positions survive for too long. Such Infantry would be easy targets of opportunity for armor; in MECH BRIGADE, such troops survive simply because the time needed to eliminate them is better spent elsewhere. Thus, the Infantry survives in a lethal battlefield, virtually unscathed.

Given MECH BRIGADE's faults, it is still enjoyable as was its predecessor. However, this reviewer does not feel that it is an accurate simulation of modern warfare; lessons learned herein would have little application on the Central Front.

From the Trenches: SSI will shortly release BATTLE OF BRITAIN (similar to USAAF, but in two-minute turns) and is working on a tactical naval simulation of World War II (with options of up to 20 ships per side).

Coming in December: Battle Bytes presents its annual wrapup of every wargame on the market for the AtariII

### Minature Golf Plus (Continued from page 10)

friends creating for each other a "special challenge" golf course, to see who can be the "Top Pro".

The instructions for the Construction Set, as well as for the golf game, are very well written, easy to understand, extremely user friendly, short and to the point. This is a game set that does not take you hours to mull over the instructions before attempting to operate. In less than ten minutes anyone should be able to play the game and/or operate the Construction Set with confidence.

This game is highly recommended. It's interesting, the controls respond well, the graphics are excellent, and, mainly, 'cause it's adjustable (by means of the Construction Set) to fit the capabilities of everyone, from child to adult. Theoretically then, this game never need become obsolete, due to lack of challenge. It's kinda the "ultimate" in miniature golf games and never need become a "shelf sitter" due to lack of interest or challenge.

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## Atari Small Miracles

by Mark Brown

Welcome back to Atari's Small Miracles, the column dedicated to the small miracles that our humble 8-bit Atari can perform with so little effort. Atari's Small Miracles: Showing off the miracle of the modern age, the Atari computer.

Am I humbled. Last month I went through a long tirade about how this column goes through such a lengthy process to get published that every once and a while an error creeps in. I then went on to confidently give a correction to a program, GRTEXT, and claim that it should have worked. Well, apparently I didn't do all the checking of the program I should have. In retrospect, it seems I did none at all. For when James Densmore of McLean said he couldn't get the program to work, I went back and checked the data. I found FOUR errors in the data for GRTEXT and TWO in ROTATE. I've decided to simply reprint the two programs.

If you ever have to spend more than an hour writing and debugging a program, the odds are that the fault is in the program, not in your typing. Write me a short letter describing the problem and I'll see what is wrong. All programs work when they leave my computer to go into the abyss of publication. If you simply can't find what is wrong, something happened between my computer and yours that shouldn't of. If you enclose a (single or enhanced density) disk and a self-addressed stamped envelope for it, I'll put the program in question on it as well as pack it with as many of the older programs and coming-up programs as I can fit.

So without further ado, here are GRTEXT and ROTATE.

### GRTEXT

```
10 C=0:DIM A$(136):FOR A=1 TO 136:READ
  B:C=C+A*B:A$(A,A)=CHR$(B):NEXT A:IF C
  ( )1024302 THEN ? "Data error!":STOP
20 DATA 216,24,165,87,105,120,168,177,
  212,133,222,104,104,133,213,104,133,21
  2,104,133,215,104,133,214,104,104
30 DATA 133,216,198,216,169,0,133,221,
  164,216,177,214,8,41,127,201,96,176,10
  ,201,32,176,4,105,64,144,2,233,32
40 DATA 10,10,38,221,10,38,221,133,220
  ,165,221,109,244,2,133,221,165,212,24,
  101,216,133,218,165,213,105,0,133
50 DATA 219,160,0,177,220,40,8,16,2,73
  ,255,145,218,165,218,24,101,222,133,21
  8,165,219,105,0,133,219,200,192
60 DATA 8,144,228,40,198,216,16,167,96
  ,39,19,19,9,9,19,19,39,39,39,39,39,
  39,19,39
```

```
70 REM *****
  * Program above:sample below *
  *****
80 FOR A=3 TO 15:GRAPHICS A+16:JUNK=US
  R(ADR(A$),PEEK(88)+256*PEEK(89),ADR("*
  Atari!_*"),10):FOR B=0 TO 99:COLOR B
90 TRAP 100:PLDT 0,10+B:DRAWTO 39-B,10
  +B:NEXT B
100 FOR B=1 TO 200:NEXT B:NEXT A:FOR A
  =1 TO 500:NEXT A:GOTO 80
```

### ROTATE

```
10 C=0:DIM A$(72):FOR A=1 TO 72:READ B
  :C=C+A*B:A$(A,A)=CHR$(B):NEXT A:IF C( )
  353341 THEN ? "Data error!!!":STOP
20 DATA 104,104,133,213,104,133,212,16
  9,0,160,7,153,217,0,136,16,250,169,1,1
  33,214,169,7,133,216,164,216,177
30 DATA 212,133,215,160,7,169,128,36,2
  15,208,21,74,136,16,248,6,214,198,216,
  16,232,160,7,185,217,0,145,212,136
40 DATA 16,248,96,72,185,217,0,5,214,1
  53,217,0,104,208,223
50 REM *****
  *
  * Rotate subroutine above *
60 REM * Sample program below *
  *
  *****
70 ? CHR$(125);"Please wait...":FOR B=
  0 TO 3:FOR A=0 TO 31:POKE PEEK(88)+256
  *PEEK(89)+40*B+A+404,32*B+A:NEXT A
80 NEXT B:DIM F$(2048):A=INT(ADR(F$)/1
  024)*1024:A=A+1024*(A(ADR(F$))):POKE 75
  6,A/256:FOR B=0 TO 511
90 POKE A+B,PEEK(57344+B):POKE A+B+512
  ,PEEK(A+B):NEXT B:FOR B=0 TO 63:JUNK=U
  SR(ADR(A$),512+A+8*B):NEXT B
```

### PUZZLE15

Steve Matsumoto of Houston really burned a lot of midnight oil to bring you these next two programs; I consider them the best programs that this column has ever seen. PUZZLE15 is a computerized version of the old board with tiles on it that you slid around to try and get back in correct order. When you type in the program, make sure you use statement abbreviations; otherwise the program won't fit on your screen. Since player/missile



graphics are moved in this program with strings, you'll have to LIST the program to disk and re-ENTER it before you can run it. When you do, the grid will appear in front of you and the numbers will be shuffled. Then you'll be presented with a ">" symbol in the bottom text window, meaning that it is your turn to try and get the tiles back in their original order. Press any key to move the cursor and the RETURN to move that number to the blank space. Good luck solving it!

```
10 DIM P$(128),C$(15),Z$(1),S$(64),H$(
64),N$(64),L$(15):H$=" ":H$(64)=" ":H$
(2)=H$:Z$=CHR$(0):S=PEEK(106)-4
20 F.I=1 TO 15:H$(4*I,4*I)=CHR$(48+I+7*
(I/9)):L$(I,I)=CHR$(13):C$(I,I)=CHR$(1
26):N.I:POKE 106,S-4:GR.2:P=256*S+512
30 POKE 559,46:POKE 53277,3:POKE 53256
,3:POKE 54279,S:F=P-PEEK(140)-PEEK(141
)*256:RES.F:V=PEEK(134)+256*PEEK(135)
40 POKE V+2,PEEK(183):POKE V+3,PEEK(18
4):FOR I=P-128 TO P-1:POKE I,0:N.I:FOR
I=P-101 TO P-39:POKE I,252:N.I
50 FOR I=0 TO 2:POKE 53253+I,91+32*I:P
OKE 705+I,68:N.I:POKE 704,116:POKE 709
,68:POKE 710,152:T=1:E=1:U=53770
60 N$="0000123456789ABC56789ABCDEF6000
00123056709AB0DEF23406780ABC0EFG0":B=1
6:CLOSE #2:OPEN #2,4,0,"K":N=0:S$=H$
70 POKE 53260,0:N=(N+1)*(T=0)+T*INT(4*
PEEK(U)/256):N=N-4*(N/3):C=ASC(N$(B+16
*N)):C=C-48-7*(C/64):IF C=0 THEN 70
80 POS.0,2:FOR I=0 TO 2:? #6;H$(16*I+1
,16*(I+1)):? #6;" ";L$:NEXT I:? #6;H$
(49,64):Q=INT((C-1)/4)*16
90 R=32*C-8*Q+28:POKE 53240,R:P$=Z$:P$(
128)=Z$:P$(2)=P$:P$(31+Q)=C$(1,11):L=1
55:IFT=0ANDH$( )S$THEN? "":GET #2,L
100 IF T=1 OR H$( )S$ THEN C=C+(B-C)*(L
( )155):C4=C*4:H$(B*4,B*4)=H$(C4,C4):H$
(C4,C4)=" ":B=C:E=E+T:T=E(150:GOTO 70
```

### GR2PLUS

GR2PLUS is an incredible demonstration of an under-utilized text mode; multi-colored text using the GTIA chip. This program has no interaction, just type it in and watch. It really is spectacular. If you are

suitably impressed with the mode, read the October and November issues of *Compute!*, where the Insight:Atari column discusses the mode in depth. Oh, and thanks for the plug, Steve.

```
10 S=PEEK(106)-8:POKE 106,S:C=256*(S+4
):GRAPHICS 0:FOR I=0 TO 12:POKE C+I,PE
EK(57344+I):NEXT I:CS=0
20 FOR I=8 TO 15*8-1:READ A:POKE C+I,A
:CS=CS+A:NEXT I:GRAPHICS 2+16:POKE 756
,C/256:POKE 704,0:T=1:POKE 623,128
30 IF CS( )6698 THEN ? "DATA ERROR"
40 POS.3,2:FOR K=1 TO 6:? #6;CHR$(14);
" ";:NEXT K:POSITION 6,4:FOR I=1 TO 5:
? #6;CHR$(I+128*T);:T=(T=0):NEXT I
50 POS.3,8:F.K=1 TO 6:? #6;CHR$(14+128
);" ";:N.K:POS.5,6:FOR I=6 TO 13:? #6;
CHR$(I+128*T);:T=(T=0):N.I
60 FOR K=2 TO 4 STEP 2:FOR I=0 TO 7:PO
KE 705+I,K+16*(2*I+1):NEXT I:FOR J=1 T
O 500:NEXT J:NEXT K:GOTO 50
70 DATA 0,21,128,60,1,42,195,20,0,0,0,
0,4,162,51,17,0,0,0,0,64,32,51,20,0,0,
0,240,4,168,12,81
80 DATA 0,68,136,204,68,136,204,17
90 DATA 0,136,51,17,34,51,17,34,0,128,
48,17,32,51,17,42,0,0,0,16,40,48,17,16
8,0,0,0,80,8,252,4,162,0,0,0,0,40
100 DATA 192,64,42,0,128,192,65,136,20
7,68,34,0,0,0,1,136,207,0,170,0,0,0,64
,0,192,64,0,0,85,85,170,170,255,255,0
```

And that is all for this month. I'm sorry I couldn't write any programs on my own this month; I'm now in college, separated from my Atari. If I had the time, I know I'd miss it. However, next month you can expect some pretty impressive programs dealing with an aspect of our computer that this column has largely ignored; sound. So, until next month, keep those miracles coming to:

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And I'll see you in the next issue!

\* \* \* \* \*

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## A PRACTICAL SYNFILE+ APPLICATION

by Connie Elliott

The only trouble with the October issue of Current Notes is that it comes in October — after school starts! I can't bring back summer or speed up the time between now and Christmas vacation, but there are a few tricks I have learned with the Atari that can save you time in researching and writing papers. You need an Atari computer with a disk drive, SYNFILE+, PAPERCLIP, and a printer.

Last year I entered the National History Day research paper competition. There was a great deal of research involved and if I had written everything down on 3 x 5 cards, the stack would have been over my head. In addition, I would have had to organize all those cards and then copy everything into a draft paper before I could really start writing my final report.

But, computers have their own special 3 x 5 card systems called database managers. So, instead of thousands of 3 x 5 cards, I used SYNFILE+. The database program was used to store my information and to sort and print out the data in the order I wanted. I started my research with a general <hand written> outline. With that outline, which does take some thought and work before hand, it was easy to tell where each topic was to go in the paper. In other words, before beginning, I had a feeling as for how I was going to structure the paper. With this outline in mind, as I produced each computer 3 x 5 card, I knew where the information belonged in the overall paper. Figure 1 shows the basic SYNFILE input form I designed.

Figure 1

I. _	II. _	III. _
A. _	B. _	C. _
1. _	2. _	3. _
YEAR: _	MO _	DATE _
Elections: _	Money Supply: _	
Electoral Disputes: _	Precious Metals: _	
Authors Last Name: _____		
Short Title: _____		
Page No: _____		
Text Field1: (255 characters...)		
Text Field2: (255 characters...)		

The one-character fields I, II, III, A, B, C, and 1, 2, 3 reflected the general outline I had prepared. Thus, if information were relevant to Part II, Section C, Subsection 1, each of these fields would be checked. I included a four-space text field for year and two text fields of two spaces each, one for month and one for date. Because of what I was researching, fields for money supply, elections, and precious metals were included so I could sort on those specific topics if I

needed to. For my bibliography, I put in text fields for the author's name, short title of the publication, and the page numbers where I found the information. The final step was to install two text fields of 255 spaces each which I used for the text of my entries.

After saving my entry form to disk, it was necessary to choose an index before I could start putting in data. INDEXing lets SYNFILE+ know the most important points you want it to use when searching for information. This helps you sort your data. I INDEXed on the outline, subject matter and chronological fields. If you work from an outline structure that is similar, you can index on the Roman numeral, alphabetical, and Arabic numeral fields.

As I did my research sitting at my 130XE, with SYNFILE+ up in the Entry mode, I would enter the text or note, put in the bibliographic material (e.g. author's name, publication short title, and page number), put an X in the appropriate subject field (e.g. Elections) and fill in the date field as best I could.

Once all the information was entered, at least for one sitting, I went back to FILES and chose the CLOSE option to save the data to disk. Note: This is very important and should be done often so you do not lose data! With the data stored in SYNFILE+, you can arrange it in outline form, by subject matter, by author, or however you want. All those hundreds of 3 x 5 cards I would otherwise need were eliminated.

When I finished entering all my information, I formatted a new disk and put it in drive #2 and, still in SYNFILE+, went to the REPORTS mode (trust me, you have to do it this way!) and chose the LABELS option. (Using my method, you must design the format of your report and you can only do this in the LABELS option. LISTS has a set format you really can't use.) The label I designed had the year field, the month field and day fields and then the two long text fields back to back.

I generated a report from the REPORTS mode by searching (sorting) on the indexed fields. I first viewed the report on the monitor screen, to see what was going to happen. Since it didn't cause an explosion and seemed to be in the order required, I generated the report again (you have to) and printed it to disk, using the newly formatted disk in drive #2 to receive the report.

At this point, I needed word processing power, so I went to PAPERCLIP as it is fully integrated with SYNFILE+. With PAPERCLIP in RAM, I told the machine to

(Continued on page 17)



UNDERCURRENT NOTES:*Review of a Husband Who is a Computer Lover By a Wife Who is Not!*

Though I understand only about 1/100 of what I read in Current Notes (when I do read it), I still feel compelled to write you from the distaff point of view of a computer lover. Please understand, I am not mechanically inclined. When we get a new appliance, I hand the instruction book to my husband, Jack, ask him to read it, and tell me what it says.

The first time Jack mentioned "computer," I didn't even know what he was talking about! But he spent two hours extolling the virtues of this computer and how invaluable it would be to us. I remember nodding, obviously brainwashed, and before I could turn around, I found myself in a very foreign-looking store filled with men and boys all playing games with funny-looking contraptions that resembled flat typewriters with TV sets on top of them. We spent about 2 1/2 hours there, with me wandering around this dumb store, positively bored to death, and trying to smile everytime Jack glanced at me while he spoke earnestly with a salesman.

Finally, there we were out in the sunlight, getting into our car, backing it to the store, and watching while all these boxes were loaded into our trunk. Jack smiled at me -- so happy -- I smiled back -- so confused. He whistled on the ride home and told me how easy it was going to be to balance the checkbook, do taxes, etc. (Understand he kept saying "we" in all the many activities with the computer.) He read the instructions the entire afternoon and didn't stop until 2 o'clock in the morning. Then he sat down to put to work all he had absorbed. He spent two solid days facing this machine -- never speaking, not eating, not even acknowledging the presence of his family.

On the afternoon of the third day, he came up for air. He rushed into the family room where I was sitting (feeling lonely, bored, and forgotten), grabbed my hand and told me he had something to show me. I went along and there I was, looking at this TV screen while he pushed the buttons in front of him. All these figures suddenly appeared, and Jack looked so proud I thought he was going to explode. "What is all that?" I stupidly asked. Jack said, "That's what you've spent at Garfinkel's in the past three years." I looked at him as though he had lost his mind. Is this what we spent \$400 on?

From that moment on, the computer and I were enemies. I never went near it. I didn't want to have anything to do with it. I gave it a wide berth, and made sure never to come within three feet of it -- afraid of what other secrets would be exposed on the screen by this all-seeing, all-knowing eye.

The past five years have not been easy. The children all wanted to play games on the computer, but though they tried hard, they just couldn't outstay their Dad, and were always asleep by the time he would finally leave the seat in front of the computer. Jack and I became strangers -- we only saw each other a few minutes a day. He also developed a pallor from never being out of doors. The children grew up -- dated, married -- grandchildren came. I don't think Jack even noticed. I finally gave up and went to work. I don't think Jack noticed that either.

Wait -- there is a happy ending. I went to work for a builder selling new homes. When you sell homes, you do lots of written figures for confused, prospective buyers to look over. Jack wrote mortgage programs for me that are the most time-saving, fabulous programs I have ever seen. Yes, even I now "use" a computer (but only while wearing gloves). Buyers see all the individual figures on the screen, and if the computer says they're qualified to buy, well by golly, the computer can't be wrong! Understand though, it took me a year before I'd use the programs. I was still very distrustful of this computer. However, I must admit, it has been a terrific asset in my job and God Bless Jack for all the hard work he's done to make me a success in my job.

Jack's been retired for the past seven years, and I see less of him now than when he worked as an agent for the Secret Service and travelled six months out of the year.

I guess what I'm really trying to say is -- all kidding aside -- Thanks dear for your hard work, your expertise, and your ingenious ideas and support in my job!

Georgie Holtzhauer

Synfile Application (Continued from page 16)

read the disk in drive #2, which it did. There, before me, was my chronology of events, already a fairly good draft of the report. All that remained was to get to work filling in the rough edges and editing to produce my final paper.

[Connie Elliott is 14 years old and goes to school at McLean High School in Fairfax County, Virginia where she is entering the 9th grade. The research she describes was done while she was an 8th grader at Longfellow Intermediate School. Connie's paper was chosen as one of only two to represent Virginia in the National competition.]



THE HAPPY REVISION 7.0*Reviewed by Rick Holtzhauer*

Not too long ago, I received a strange envelope in the mail, from B C Computers. On the outside was stamped "Rev 7". Then, it hit me. Could it be? It was indeed! The long awaited Happy Rev 7, something I thought would never be released, was finally in my hot little hands.

For most Atari users, the word "Happy" is synonymous with the word "backup". In fact, the Happy Backup program tends to overshadow other aspects of the Happy package. For those of you not familiar with a Happy drive, the Happy is a drive enhancement for the 810 and 1050 drives. It is a custom chip board that replaces the Atari EPROM and 6507 CPU. The board plugs in where the 6507 was removed. On board is the Happy ROM, a 6502 CPU, and, depending upon the board, either 6K or 8K of RAM.

Such a board setup enables very fast reads of a disk, enables true double density (1050 only), a permanent record of which density the disk is in (so the density doesn't have to be read each time the disk is accessed), disk formatting capabilities not available to a standard drive, and other neat things.

Somebody booting up a Happy for the first time will be amazed at how quickly it reads. The drive will read the entire track in 1.05 revolutions of the disk. This track is read into the onboard RAM buffer, then transferred in machine gun-like speed to your computer. This type of disk read is termed "track buffering". Theoretically speaking, if the drive had enough RAM onboard, it could read the entire disk in 42 disk revolutions. The drive would never have to be accessed again for a read operation. The Happy would just read from the RAM instead of the disk.

A couple of exceptions to the fast read time. One is with a disk formatted by the Indus GT drive while in the Synchomesh mode. Both the Happy and the 1050 Duplicator have a very tough time trying to read this disk. The Indus places a non-standard sector arrangement on the track, and for reasons I don't know, makes life tougher for these enhancements. The other exception is with a commercial disk protected using a double sectoring technique. These enhancements cannot correctly read through the double sector.

A Happy drive will recognize a read or write to sectors \$8000-97FF. This is the RAM buffer on the Happy board. Happy uses part of it in conjunction with the drive ROM for various purposes. The Omnimon manual states that \$800-up is the addressing for the RAM. I guess it just depends upon the board you have.

PROGRAM OPERATION

The overall operation of the various programs is

excellent. Every error except one I have encountered has been trapped. Since the backup and compactor, among others, load some of their programs into the drive buffer, turning your disk drive off and on during operation of the above will result in an error, since this buffer will be cleared on power up. The programming itself is very professional. It is obvious someone invested quite a bit of time on working out all possible bugs.

WARP SPEED MENU. Upon booting up, the user will be presented with the Happy Rev 7.0 Warp Speed Menu. Also displayed is the number(s) of Happy drives in the system, either a 130XE or an Axlon ramdisk, the amount of memory available to the user, and whether any tracer information (explained later) is available. Below is the Warp Speed Menu.

1. DRIVE OPTIONS
2. DIAGNOSTIC
3. SECTOR COPIER
4. HAPPY BACKUP PROGRAM
5. HAPPY COMPACTOR PROGRAM
6. MULTI DRIVE PROGRAM
7. ENABLE TRACER
8. DISPLAY TRACER INFORMATION

I'll go over each of the above in order, with the exception of the backup program. This deserves a detailed description.

1. DRIVE OPTIONS. This option displays a sub-menu, each function deserving individual comment:

```
SET UNHAPPY MODE
INIT DRIVE
CHANGE DRIVE NUMBER
SET TO NEW OFF DELAY
SET TO U.S. EMU
SET WRITE PROTECT, ENABLE
SET TO FAST WRITE
```

SET UNHAPPY MODE. By placing the Happy drive in the unhappy mode, your drive will resemble a stock drive, with the exception of allowing double density. In a review I wrote on the 1050 Duplicator, I stated that a Happy drive placed in this mode was undetectable. Happy Computers informed me there was a program on the market that would not operate properly in the unhappy mode with previous versions of its software. The program is "Alternate Reality". A custom SIO routine is used to read the disk, and, for reasons beyond me, would not operate correctly on "unhappy" Happy drives. Happy Computers stated they didn't know if this was a deliberate attempt to seek out the Happy, or was just coincidental. In any case, this has been taken care of



In Rev 7.0.

This is also a good time to point out how programmable this drive really is. The Happy drive only recognizes a few commands on boot up. The standard read, write, etc..., and a few special ones the drive uses. These are transferred to the RAM buffer on board. This procedure gives Happy enormous flexibility, as it allows each program from the menu to load only the commands it needs at the time, and allows these commands to be changed easily if needed (I have done this myself).

**INIT DRIVE.** By selecting this option, the drive assumes the state of just being turned on.

**CHANGE DRIVE NUMBER.** Allows the user the option of changing the Happy drive from, say, drive one to drive three, without having to mess with the switches on the rear of the drive. Boy, can this come in handy!

**SET TO NEW OFF DELAY.** Changes the time, from a scale of A-Z, the drive takes to timeout after the last disk operation.

**SET TO U.S. EMU.** I frankly don't understand this option. I believe it has to do with allowing Sparta-Dos to operate on the Happy at a high speed. It also says something about improving some of the I/O aspects of some Happy's. I just don't know. I'm reading from the manual here, but it still doesn't mean too much to me. I also don't have Sparta-Dos. Sparta-Dos users will probably be able to understand this much better than I.

**SET WRITE PROTECT, ENABLE.** These options are available only if the user has the 1050 Controller switch. This will either write protect, without a write protect tab, or write to either side of a disk, notched or not.

**SET TO FAST WRITE.** I think I had my Happy four months before I realized the significance of this option. It is not explained in the Rev 6.6 instructions to any great degree, but is in the 7.0 manual. Anyway, this allows for fast writes on a Happy drive. Normal write speed is improved, and it is actually a fast write with verify! Happy users may try this by choosing this option, then booting up a Dos and copying a file. The difference is very noticeable. I liked this so much I made a small Dos file that enables this option and placed it on many of my Dos disks. The option stays enabled until the drive is turned off.

A word of caution. The drive may appear to have finished the write operation, but is not actually completed until the red light on the drive goes off. If the door is opened before the light is off, the light will begin blinking, which means a write verify error has occurred. So many people remove the disk from the drive before the light goes off, that Happy had to make the default condition of this option "off".

**2. DIAGNOSTIC.** The Happy Diagnostic checks for correct operation of drive RPM, controller switch, high speed I/O, reads and writes in all three densities, and a test of the Happy itself. Altogether, a pretty comprehensive package.

**3. SECTOR COPIER.** If you have never seen a Happy in operation before, and have the opportunity to see just one feature, this is it. The read and write speed is incredible, and the first time I saw it going, I thought my drive was broken. The program does not use the SIO access location at \$E459; instead, Happy designed a custom program embedded inside the Sector Copier. Normal SIO baud rate is around 19,200. The Sector Copier operates at over 40,000. Happy says the time could be improved even better, but I think they mentioned something about compatibility with the 810, which allows the two to work together, as the reason for its current limitations. Indus drive owners will notice the resemblance to Synchromesh. However, this SIO routine will dust the Indus in write operations. No special format is needed, either, as the Indus requires.

The program operates in all three densities, and you can pick the density you want or let Happy automatically choose it for you. This program also supports ramdisk operation, so a single density disk can be copied in one swap. If a bad sector of any type is encountered, operation is ceased, and an error message is printed.

I would like to see Happy offer a slight option on this copier. If a disk error is encountered, to inform the reader that one has occurred, and instead of ceasing operation, give the user the choice of stopping or continuing. In this fashion, all possible data can be recovered without resorting to the Backup program, which would only write the bad sector on the destination disk anyway. Realizing that options require memory, at a premium in a sector copier, it still should not be too difficult and would add a nice touch.

**4. HAPPY BACKUP PROGRAM** - see comments below.

**5. COMPACTOR PROGRAM.** This program alone is darn near worth the price of the package. The Compactor is used to combine self-booting programs that do not use the entire disk onto a single disk, and all protection is duplicated. Compacted disks may only be used on a Happy drive.

For example, say I have three programs, each twelve tracks in length. I wish to combine the three onto a single disk. Using the Happy Tracer, I would first trace out a disk, then load the Compactor. The Compactor checks a directory to make sure enough room is available, then copies the tracks previously traced from the original disk to the compacted disk. It then asks for a filename, which may be up to 16 characters in length.

To load and run a compacted disk, insert the disk into the Happy drive. A menu will be presented. Push



the appropriate number, and away you go. The Happy then loads in necessary data to the drive buffer and places the drive in the unhappy mode. You cannot write to the disk, nor will the Happy be recognized, until the program is loaded and you open the drive door. When the door opens, writing is enabled and your Happy goes out of the unhappy mode to normal Happy operation. Backup capabilities of the Compactor are equivalent to the Happy Backup Rev 6.6.

I have used this program extensively to back up programs. But by using this when I can instead of the backup, I have cut the number of disks I have needed by about 60%.

**6. MULTI DRIVE.** The Multi Drive is for a two-four Happy drive system configuration. As I have but one Happy drive, I can only write from what I'm reading from the manual. This option allows up to three copies of a source disk to be written in slightly longer than it takes to make one copy. The drives actually read and write at the same time. This sounds pretty impressive. It copies some forms of protection, but not skew alignment or PDB files (explained in Happy Backup section). This would increase the time to copy the disk(s). This is best used to backup or make many copies of a Dos file or just a data disk.

**7/8. ENABLE/DISPLAY TRACER.** The tracer is a special function used mainly by the Compactor, and to a small degree, by the Backup program. By enabling the tracer, you have locked the enhancement out from the computer. Your drive resembles a stock drive. The computer is now rebooted with the disk you would like to trace. Unknown to the computer, the Happy is watching the serial bus, and remembering the number of each individual track accessed by the drive. After all data on the disk has been accessed, reboot the Warp Speed Menu, choose option eight, DISPLAY TRACER INFO, and a map of all tracks accessed for the disk you traced is displayed. This is quite a snazzy little operation to watch!

#### HAPPY BACKUP OPTION

This option (menu item #4) allows the user to make archival copies of protected software. This is the bread and butter of Happy Computers (according to the ABC's of Atari, this board is, or was at one time, guaranteed to back up all programs on the market for five years! I don't believe this was ever in effect for the 1050 drive, though.). After loading this selection, the user is given the options of either copying the entire disk, or going to a "Special Recovery Menu". This menu will allow the user to just copy the tracks he chooses. Instead of the entire disk, increase or decrease the number of times a track can be re-read if not read correctly at first (good for trying to read a garbled track), and other parameter setting. There are also two important choices here. The first is the skew alignment selection. This will increase the copy time quite a bit, but this selection is needed on a few programs that are heavily

skewed. The other, and the one surely appreciated by all Happy users, is the Forced Slow Mode selection. By choosing this option, the Happy drive will place a special format on the disk. This format automatically places the drive in a slow read mode. As most commercial programs may not be read in the fast read mode, this saves the user quite a bit of time from booting up the Happy software and turning the enhancement off. The program will also recognize a two Happy drive setup, with the source drive always one, and the destination drive the other Happy.

The copy process then begins. The process is very fast. I think this is the same SIO routine used in the sector copier, or very similar. It is slower, though, because a lot of extra disk commands are needed to analyze the track and sectors. Displayed on the screen will be the track the program is on and the number of good sectors in that track. If a track is encountered that contains 20 or more sectors, the process aborts and an error message is displayed on the screen. This is also where the Rev 7 takes over.

**"PDB" FILES.** When I first booted up the Rev 7 software, visions of disk wizardry and magic were dancing through my head. I was surprised by what I received. Any program with a protection format using 20 or more sectors per track (and virtually every new piece does), requires the use of a "pre-determined backup" file, a.k.a. a "PDB" file. There are 24 PDB files on the disk. Some pertain to individual programs, others can be used for all disks by a company. An example would be PDB file 3. This file is used to backup Electronic Arts programs. The protection scheme has already been figured out, and all the user does is hit start. All necessary data will be written to the disk.

These files will be discussed in separate sections, one section pertaining to tracks with 20 sectors, and another section devoted to tracks with 21 or more sectors.

**20 SECTOR TRACKS.** For a track with 20 sectors on it, the backup program will write out these 20 sectors without slowing down the drive. Happy Computers claims they originally came out with the "autospeed mod" for Rev 5.2. This mod would slow down the drive to about 270 rpm, allowing 20 and 21 sector writes. The only other way I know to write 20 sectors is by eliminating some of the ID-type bytes for each sector. These bytes are unseen to the computer, and contain such information as the track number, sector number, CRC, and more. Not all these bytes are needed, however. By eliminating some of these bytes, more room is available for writing sectors, enough to lay the 20th sector. These disks may be run on any drive.

**21 SECTOR TRACKS.** When backing up a 21 or more sector track, the disk reads the protected track, then writes it out in a special way. When this disk is loaded and run, Happy reads certain data off this disk and loads



It into its onboard RAM. It then locks out the enhancement, and away you go. The disk will behave as an original one, and the data in the RAM buffer takes care of the protection scheme. The backup created by the Happy is NOT an exact duplicate of the original, only an executable copy, and can be run only on a Happy drive.

Theoretically, this type of backup system will give the user the ability to backup any disk to appear on the Atari market for a long time to come, and maybe forever. And, the operation of the program is flawless. I have yet to have a disk not run in this mode. But what happens if the disk you need to backup cannot be backed up by the Backup program, and there is no PDB file for this? You're outta luck. At the time of this writing, I have come across two such programs. They are "Spy vs Spy II", by First Star, and "Hardball", by Accolade. "Hardball" may be backed up using PDB file number 19. There is nothing for "Spy". This brings us to the question of how often the PDB files will be released. As needed? For the type of backup system this is, you have to expect that Happy would issue these files as needed, and quickly. But one usually does not associate the word "Happy" with anything that happens "quickly". I guess we'll have to wait and see.

I have just recently been informed by a Happy owner that the Happy/Archiver will backup a disk with 21 sectors. These may be run on any drive. The Happy/Archiver program sells in the \$40 range. Happy claims they can write 21 sectors also (I've written 22 full sector tracks successfully), but this ability would need an autospeed mod to slow the drive down. They also say that if enough people clamor for this mod, it may be offered at a future date. So, if you own a Happy and want this feature added, write to Happy and say so. As for me, the last thing I want to hear out of Happy Computers is the word "revision". As for 21 sector capabilities, I'll believe it when I see it. I have since ordered the Archiver. Since the Archiver is a software-only program, what is possible on the Archiver is possible with the Happy backup.

I asked Happy why it could not make a duplicate copy of all programs on the market today. Especially some programs by Synapse, Electronic Arts, and Paradise. The first two use disks protected by a 34 sector track. "Alternate Reality" employs a superb protection scheme. This track contains at least 30 sectors, but both the Happy and Duplicator read these as about 18 sector tracks, and this value varies. This track drives both the Happy and the Duplicator right up the wall, which is the reason I have not received an accurate sector count. I believe this is what Duplicating Technologies (DTI) is referring to when they mention "weak sector" protection. In addition, a backup copy of "Alternate Reality" made without a PDB file will give you the impression of a properly functioning program when run on a non-Happy drive, although it will not actually operate correctly.

Happy's response was that these tracks are written

with a special drive controller and other hardware that could run over a thousand dollars. I guess anything that Happy says relating to either the performance of their product or a competitor's product must be taken with a grain of salt. I have not been able to substantiate their claim from an impartial source, either. This may be a true statement, though. The three companies mentioned above do market programs that represent such a tremendous leap (21 to 34 sectors) in formatting power it may be quite true that either some very special hardware or the supernatural was employed.

The Happy can backup up any type of skew aligned disk. A skew aligned disk has the tracks of a disk laid down in a precise way, and each track is relative to the track before or after it. I have a small program that checks for a skew disk. This program reads certain sectors of a disk, and this process is timed. If the disk is skewed, the time it takes to read these sectors is much quicker than a normally formatted disk.

The Happy backup has a skew alignment routine built into its onboard Operating System chip, enabling a backup, no matter how heavily the skew is.

Overall, the Happy Rev 7 backup is a success. I don't care how the backup is created, but I guess the bottom line is I have my backup. Such a backup program may go a long way toward stamping out disk piracy on the Atari. It must be pretty hard for a programmer to offer a quality program at a fair price, only to see drives such as Happy be able to make copies. By at least restricting these illegal copies to a Happy drive only, you have, in effect, vastly reduced the market for these copies, while still allowing a backup copy to be made. I see more software companies resorting to these exotic disk formats, if that is what it takes.

OTHER PROGRAMS. Included are a few files. One of these makes your Atari Dos 2.0 into a Warp Speed 2.0. This Dos will now operate at the speed of the Sector Copier. It may also be used on Dos 2.5. I love it! There is another program that frees the area from \$C000 to CFFF in the computer, and a program that contains the source code for the high speed SIO routine used in the sector copier.

HAPPY OPTIONS. Happy Computers offers many options. An enhancement manual, a custom formatter, Warp Speed DosXI and Topdos, and a controller switch. The switch will write protect/enable your disk, and turn the Happy off and on at the flick of the switch.

#### HAPPY VS. THE DUPLICATOR

This section will deal only with the backup programs available from these companies. At the time of this writing, the only competition for the Happy on the 1050 drive is the 1050 Duplicator, by DTI. As it stands, the Happy can backup a 20 sector track without slowing down the drive. Although I've found Rev 2.5 of the Duplicator



to have only marginal success in writing a 21 sector track by slowing down the drive, I fully expect further enhancements of the Duplicator's software to make the Happy and Duplicator pretty much even in raw formatting power.

Since I expect the formatting powers to be roughly equal, I am looking forward to seeing how DTI goes about backing up programs such as Electronic Arts 34 sector track "One on One". Happy Computers, as stated above, had to resort to the PDB files and running these on Happy drives only. In response to an article I did on the Duplicator, DTI promises that by the end of the summer, they will be able to copy every piece of software on the Atari market. Their ads claim these disks will run on any drive. Seems like we have quite a difference of opinion here by the two companies, eh?

In fairness to DTI, the promises made above were in respect to their Rev 4 software. At the time of this writing, their Rev 3 software, due out last February, had not been released. Their letter recently printed in CN promised, though, this revision will copy everything on the market except for a protection scheme employing weak sectoring.

They also refer to the Happy operating system as an "antique", and that their operating system had many more routines built in. What they say about the two operating systems may be entirely true, and I do not wish to discuss the merits of this. But I would like to make a point here.

If you take the Happy board and the Duplicator board and place them side by side, you will find each contains a 6502 CPU, and a RAM bank. This leaves the Operating System chip. This OS chip is nothing more than a software program burned into a chip. Since the only real difference here is this program chip, I cannot see any one board being substantially more powerful than the other. It's the program that counts. The program burned into the OS chip.

Now DTI claims they will succeed, with virtually the same hardware, where Happy Computers could not?

There are two reasons why I believe Happy computers would not allow this to happen. The first is since the Duplicator was released well before the release of Happy's Rev 7, and since I am sure Happy was very aware of DTI's claims before release of Rev 7, I cannot believe Happy would allow such a technically inferior program to exist against a Duplicator with the abilities to write 34 sector tracks. I could understand going up against a competitor 20 sectors against 21. But no, not 20 against 34.

The second reason is this. As I understand, most, if not all, of Happy's programming is done by a single person. To me, at least, this guy is the Atari disk drive Magic Man. One of the keenest and most innovative

programmers to ever sit in front of the Atari, he is the creator and developer of this type of board configuration, track buffering, the Warp Speed software, and much more. When one buys a Happy, he is buying more than a custom chip; he is buying a piece of this programmer, one with a proven track record of excellence. If there was any way to copy these exotic tracks, Happy Computers would have pulled it off.

In any respect, it is not too hard to pick a winner in this department between the two boards. As it stands, the Happy is far superior with the Rev 7. But the Duplicator does not have its revision released, so who knows what it will do? How will they backup tracks with 22 or more sectors? Who knows? Only time will tell...

#### SUGGESTIONS

I have a few suggestions for Happy Computers. Allow the Happy Backup and Compactor to take advantage of the extra memory in the 130XE. At the present time, this is not available.

Allow the Compactor to compact disks with 20 sector PDB files. Since the Compactor and a disk that must run on a Happy both use the same RAM area, compaction of such disks is impossible. Allowing the 20 sector PDB file compaction would increase greatly the number of programs available for such.

Bring out the autospeed mod. Since the autospeed mod would allow a 21 sector backup, this would also allow disk compaction of a 21 sector program, again increasing the amount available for such.

The last thing I would like to see is a Disk Analysis Program. This program would analyze the protection method used on a disk and instruct you on the proper PDB file number to use. This would be used on disks with no PDB file. This may save Happy some time in updates, also. Such a file could be used, for instance, on "Hardball". The program would analyze this disk and tell you to use file 19. I recognized the protection on this disk, but there are others who may not be able to.

I would also like to take this opportunity to air Happy Computers out about the delay in the release of Rev 7. They took their sweet time releasing this program, but had no qualms about taking customers' money for it well over a year before release. They advertised this for quite a while, never hinting that Rev 7 was not released. Sure, they apologize for the delay in the revision NOW, but were they sorry enough to pull the advertising? No. Now, we have DTI pulling the same stunt! Atari 130XE owners: Imagine opening the box of your new 130XE computer, and finding a little note from Atari saying the computer currently has but 64K, not the advertised 128K, and they will send you the extra 64K, and the means to bank switch, at a later (a year) date. What is going on here, anyway?.



## SUMMARY/RECOMMENDATION

Overall, Rev. 7.0 is a superior product in all respects. Some of you readers may have noticed my lack of any real criticism in this review. The simple reason is, there is actually very little to criticize. I have but one Atari 1050 drive, more than one drive enhancement, and this is the board I keep in it.

Looking for a drive enhancement such as this for your drive? With all the Happy does, I feel it is by far the best choice on the market, and recommend it highly. The \$150 price tag makes this quite a value, also. Comments, criticisms, etc... can be mailed to me at the address given below.

Rick Holtzhauer  
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*Rick Holtzhauer is a Construction Electrician, Second Class, in the U. S. Navy. He specializes in the installation and maintenance of large auxiliary electrical power units. He found a Happy Drive and Omnimon under the tree last Christmas. He hasn't left his monitor since. He's the son of our 8-bit editor, who steadfastly refuses to claim any of the credit, or the blame, for Rick's opinions.*

(Editor's note: Next month we hope to have Rick's review of the Revision 3.0 software for the 1050 Duplicator from DTI.)

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*Ray Daly*  
Ray Daly, President



## ST Update

*by Sommers & Waters*

**MAGIC SACK** — On 20 September "the thing" in the Magic Sack went on display at the San Jose Computer Fair. There were 200 of so-called Mac cartridges for sale at \$99. And with that the Macintosh and the ST computer became engaged, in the market place if not in the corporate board rooms. Father of the computer couple, David Small who invented the mighty device, now called the MAGIC CARTRIDGE, states that it will run Macintosh software 25% faster, on a slightly larger monochrome screen with slightly higher resolution than the Mac and will, with the aid of a utility program, allow for the transfer of IBM data files to the Macintosh ST.

The "Magic Sack" contained the cartridge and disks with programs to run it at a cost of \$99 at the San Jose Computer Fair, and subsequently for \$129. The latter price includes a transfer cable to facilitate porting the Mac programs to the ST, presumably a null modem cable, as used in transferring 8 bit software from the Atari to the ST. Production runs after the San Jose Computer Fair were to be based on initial orders. The cartridge can be ordered directly from Data Pacific (609 E. Speer Blvd., Denver, CO 80203, 303-733-8158). Initial plans to have Shanner International market the product have been dropped. Shanner did take a MAGIC CARTRIDGE abroad to demo in London; this gave rise to rumours that the cartridge was selling abroad.

Back to earth. The instructions in the sack will explain that you need to purchase locally two 64K ROM chips, labeled "Atari Boot ROM", which are the ones used in the Macintosh itself (the old ones, not the ones in the Macintosh Plus). These are easily inserted in the cartridge. Software suppliers in increasing numbers will begin putting out their Macintosh software on ST formatted disks for sale directly to ST owners. (Next month we will review the MAGIC CARTRIDGE in more detail.)

**ST4160 BANNERED IN SWITZERLAND** — Per a letter up on USER NET, there is a computer store in Basel, Switzerland that has a sign in its window announcing the coming of the ST2080 and ST4160. (For those readers who have not taken CURRENT NOTES' author, Bill Moes' suggestion and updated your social skills with HOMEWORK HELPER: MATH, ST1040 times 2 or times 4 gives you the above product monikers). The store also has two ST1040's running IBM's version of MULTIMATE, side by side, one with the blitter chip installed to demo just how much faster graphics run with the chip. (What type of box was attached was not stated). The two advanced machines will appear as computers to run with Atari Laser Printers. The ST2080 with the laser printer will sell in Switzerland for SF 10,000 (about \$6,350 at late September rates), and may be out there before Xmas. It will have two megabytes of

RAM, to support the memory hungry graphics end of the laser printer, which we reported last month will run off the ST's cpu. The ST4160 will follow in the spring in Switzerland with 4 meg of memory, and unknown embellishments. The laser printers released in this country may also initially have a "memory insert slot" for those who wish to upgrade the combined units printing speed, before there is an ST4160 available here. Certainly, to Atari's credit is their demonstrated intention to keep the price of the printer down to a level where it serves both markets, i.e. is not only a business machine, but a companion to those ST's used in the home.

**ENHANCED ST** — Last month Atari was saying Xmas for the EST and we added a commercial grace of two months, i.e. February. The push at the company is still hard for Xmas. The edge, still under debate, is toward a detachable keyboard. The size of the screen is still undecided; 15, 17, or 19 inches, but the pixels are fixed, 1280 by 960 monochrome resolution and 640 by 480 in 16 colors. For those of you, like myself, who come recently to the monitor screen numbers, simply put: two years ago it was deemed impossible that a monitor with those specs could be made and sold for less than \$5000.

**NEW ATARI** — By now "our company" should have gone public, and hopefully some of the tiny hard working band at Atari have become millionaires for the first time, or again. The investment houses have touted stock for a company valued in the issuing portfolio at circa \$300 million with a stock offering designed to generate 1/6 of that sum in additional working capital. If that is news and it is then CURRENT NOTES' HOA (Hats Off Award) for the month goes to that same fellow, whom last month, we urged to practice playing with a mouse and the ST1040, Jack Tramiel. One of the leading newspapers in the country wrote last month, "...company which cost Warner hundreds of millions of dollars in losses...was sold to ex-Commodore International computer chief Jack Tramiel in 1983 for no cash and a few million dollars in notes. Most observers wrote the company off for dead but, ....." Mr. Tramiel, you and your hearty band are causing folk to look on ATARI users with "new found respect" and hopefully, emerging jealousy, and we are pleased to be associated with you and your group's remarkable record of success at the NEW ATARI.

**OTHER MAJOR NEWS** — The other the major news is the near absence of any new product or new new software actually appearing in the market place this month. The conjecture that Atari is releasing its products in Europe 2-3 months in advance of the U.S. would seem to be likely. Though there are quantities of tasty bits about things to come, not many are here right now. We hope that Atari is not falling back on its former ways and touting products that are aged before they appear or disappear. Our Thumbs Down Award this month goes to the Atari Hard Drive which has yet to appear on the east coast, or at least in the mid-Atlantic states. The problem with the PAL chips, which initially created a



delay, then solved, then still judged to be the source of continuing problems means that the machine which kicked off much of the enthusiasm for the device (see poll results elsewhere which point out a majority of people intend to buy a hard drive) is now displaced by a machine, the SupraDrive, which, by virtue of the size of the hard disk, i.e. 3.5 vs 5.25, runs 20 % faster than the Atari, and which has a 30% smaller desk footprint. Only a remarkable "pwp" (power w/o price) effort will regain the already lost market. Last month we adjudged that to accomplish this, there would be eventually a 20-meg Atari drive a couple of hundred dollars less than the SupraDrive, almost an electronic/price miracle. This month we conjure up a "pwp" kangaroo effort to jump back into the market, with Atari leaping over the Supra by about 40 meg and maybe a few \$100, i.e. Atari 60 meg drive for \$1200 plus. The demand for power and memory storage expands as rapidly as the cost per byte decreases. First the Atari 10 meg drive was too little and too late and now the 20 meg is coming up on the same precipice, with Supra about to shove it over the edge.

**WORD SMITHING** -- The big new word processor just released is from Regent Software. Regular readers will remember one of our reviewers doing a major bow in Regent's direction when REGENT WORD appeared along with the other early ST word processors. Its rave notices were a result of its simplicity, effortless way it got the job done, average power, and instant usability. Since then Regent Software has produced REGENT BASE (about 2000 copies already in use with positive feedback; to be reviewed in an upcoming issue) and now has shown REGENT WORD II at the San Jose Computer Fair at the end of last month and is selling "initial release" copies of it (Advance sale reported by the company at over 1000 programs; Regent is one of the top five companies along with Batteries Included that produces consistently top level ST programs.) REGENT WORD II reportedly has speed, quality, and power (again full review on the way) and if it hits the level of its parent program, will be a contender to the mighty STWRITER and 1ST WORD which by virtue of their originally being given away now dominate the ST word processor horizon. Those of you who have heard first that Atari will be releasing 1ST WORD PLUS, and then surprised yourself by discovering Atari will be the releasing agent for Microsoft's WRITER (demoed at last month's Novatari ST SIG meeting) may be asking why Atari has suddenly begun competing with itself. Has it?

**TOP EXPECTATIONS** -- What are the programs that have word-of-mouth credibility even before they are released. A few. DEGAS ELITE is at the top of the heap; the super drawing program that people call around the country to find where it is and when. The when is as you read. Its quality is not in doubt as Mr. Moes will tell you next month, including what's wrong with it, if anything. Along with the release of DEGAS ELITE comes ISGUR Portfolio System, an investor's management tool. For those of you adventure gamers that can't get any sleep because your into your 2nd hundredth hour of PHANTASIE, prepare for a sleepless fall, ULTIMA III should do it,

and if that doesn't ROGUE will. HACKER II surpasses its predecessor. STAR GLIDER has the space combat fans salivating, despite the fact nobody has actually seen it on a screen; apparently the author's of the PAWN have conjured up a reputation for exciting programs and stellar graphics. The Karpov-Kasparov group (with at least one of the column's authors among them) will perk up when they hear that the CYRUS chess demo we've been watching with frustration and anticipation will shortly be replaced by the real 3-D chess program under the purported name of PSION CHESS. The program has now landed from Europe.

**GOLDEN OLDIES** -- Those of you who ask where the "golden oldies" are, those programs that were winners on any machine, and prior to the actual appearance of the ST were rumored to require but "a few days" to translate for the coming giant, might be curious when you hear, "Hungry". Everybody thought offshore meant Taiwan, the China coast or Korea. Now there is a creditable rumour in Transylvania land that a plant of some 200 hungry Hungarians have been engaged in the highly labor intensive effort of readying the final version of such programs as STAR RAIDERS and MILLIPEDE for the holiday market. Now that they have finished those, what are the latest projects Buda and Pesht have received?

**CES** -- Reporting by the major Atari magazines gave thorough coverage to the CES software and what the movies use to call "sneak previews" and developers call "advanced Beta". Among what is expected to be the top of that group: WINTER GAMES, an 8-bit transport for sports fans. SILENT SERVICE, which is for the ST what "The Hunt for Red October" was for the best seller lists, and is reviewed elsewhere. A combination strategy and science fiction role playing program is UNIVERSE II, which our reviewer Milt Creighton says is one of the best of its kind that he's seen. DAC-EASY offers the small business or active family a full bore accounting package (review in progress). Pilots prepare; you can now take FLIGHT SIMULATOR II up on your ST and tour the San Francisco area or go straight to Tokyo and see what a crowded airport is really like. MEGAFONT ST is likely to attract attention equivalent to that which the 8-bit version did for those who wish to print graphics files from DEGAS, NEO-CHROME, and RUBBER STAMP in various sizes. Those of you former 8-biters who developed proficiency flying your F-15 at mach 1.5 over Syria avoiding heat seeking missiles and bombing and dog fighting with considerable realism, if mediocre graphics, may tighten your G-suits. F-15 STRIKE EAGLE is around the corner for the ST. If it uses half the graphics capability available to it, the program should be even more of a gut-tightener than it's 8-bit dad; coming in over the China coast at night on a bombing run at 900 feet and 1200 nautical miles per hour produced a case of dry mouth for many of us. What will it produce on the ST? Finally, the mystery candidate, will it or won't it succeed. A comedy with a hint of the curious from Infocom, LEATHER GODDESSES OF PHOBOS. Title alone should keep it off the screen until everybody else in the house is asleep.



## Singapore Sling's

by David Hsul

In my July column, I stated that the 14" Sony and Thomson color monitors can be adapted for use on the ST. You might wonder what features prompted me to chose the Sony monitor for my own system? Well, the Sony monitor has an 8-pin IBM compatible TTL port, composite video port, a power supply switch to change voltage between 110 and 240 volts, virtually all television standards used in the world, and an enhanced Trinitron tube called the Black Trinitron with an ant glare filter in the tube. Need I say more! The pin assignments for connecting the ST to a Sony KX-14CP1 are:

ST Pin No.	FUNCTION	21 pin SCART PLUG Pin No.
1	Audio Out	2 & 6
2	Composite video	N/C
3	General Output	N/C
4	Mono. Detect	N/C
5	Audio In	N/C
6	Green Out	11
7	Red Out	15
8	Ground	4
9	Horiz. Sync.	20 (via 22 Kohm resistor)
	Horiz. Sync.	16 (via 350 ohms resistor)*
10	Blue Out	7
11	Monochrome out	N/C
12	Vert. Sync.	20 (via 2.2 Kohm resistor)
13	Ground	21 (via screen, optional)

\* A voltage is needed to select RGB mode on the SCART Input, a 350 ohm resistor is used between ST pin 9 and monitor pin 16. You may need to replace it with a 500 ohm linear adjustable pot if a black band appears at the top of the screen or a faint image is present.

As known, Atari does not manufacture its own monitors. It is also true that the SF 314 drive is made by Epson and the ST keyboard is of Japanese origin. So, what then does Atari manufacture? What does Atari's slogan, "Power without the Price" mean out here in the Far East?

Any cost advantage held by Atari in the States does NOT hold for Asia. This conclusion can be best supported by examining the cost of PC clones made in this part of the world. There are some 60 to 80 brands of PC clones varying in degree of IBM compatibility made by backyard operators to medium-scale production lines. Circuit boards for memory, graphics, interfaces, and operating systems come from Japan or Taiwan. There is a choice of four different brands of Japanese disk drives, the most notable being TEAC. Depending upon price, PC type keyboards originate either from Taiwan or Japan. The casings for the PC clones come from the local

injection-molding plant. Hook up the boards, fit the disk drive and power supply into the casing and you have a PC clone.

The larger producers enter into licensing arrangements with Microsoft or other American corporations with chips similar to the IBM BIOS. Trade names can be registered in the United States. Add the cheap labor available here and you have a inexpensive PC-compatible computer. Considering the above advantages, an IBM/PC-compatible with 640K, two disk drives, color RGB monitor and loaded with ALL the necessary CARDS retails in Singapore at 20% LESS than a 520ST with monochrome monitor (U.S. retail price comparison). It is important to understand when making this price comparison that an ST package similar to that in the United States costs 40% more in England and 30% more in Asia. Without doubt, the PC clone, as a generic grouping, is the dominant personal computer used in Asia.

Of course, all Atari users know the advantages of the ST over the PC, such as the large memory capacity, speed, GEM, excellent monochrome display and analog RGB which can produce luminescent graphics. As for the possibility of an ST clone appearing on the market, it is known here that an Eastern European country is in the process of producing such a clone for domestic use and is negotiating to purchase a large quantity of SF 354 type drives as they are unable to produce the drives themselves. Whether or not they will eventually market the hardware internationally is unknown. But U.S. software developers for the ST should investigate this opportunity to increase sales.

Another interesting software development from Atari's perspective has to be the announcement of a Chinese Text Editor for the ST. The software was developed here in Singapore with the main intention for use in China. Its release is not slated until the next Comdex. The program occupies 540K of memory and can be used only on the monochrome monitor with double sided disk drive. There is a version for the Macintosh and a planned version for the IBM PC but the drawbacks of producing it for the PC is its small memory capacity. Who handles Atari in China? Maybe someone from Atari should contact Lily Kelly?

A last thought, 8-bit Atari owners with Happy drives who are unable to backup programs with more than 19 sectors per track - try copying the track over with a Diskclone used on the IBM PC.

Next time, more on non-English text editors and user groups in Singapore.



WHAT IS THIS GDOS?*by John Antonlades*

One of the heavily used words in the ATARI ST jargon is GDOS! Quite a thing! Developers keep trying to get it, programs are not released because they are waiting for GDOS and current programs are modified to use it.

No, it is not GEMDOS's little brother or even another name for it. It is the missing part of the Virtual Device Interface (VDI) of the ST, which is responsible for the device independent functions of the computer. Actually GDOS stands for Graphics Device Operating System, and here are some of the services it provides:

1. Multiple fonts can be displayed simultaneously on any display device. Programmers frustrated with the vst load\_fonts routine will be finally satisfied. So will everybody else who likes the Macintosh's pretty screens.

2. Normalized Device Coordinates (NDC) can be used to draw pictures, which will automatically be converted by the GDOS device drivers into drawings which use the maximum resolution of the specific output device. So pictures can be displayed in any output device regardless of resolution and without any need for modification. NDC's provide the user with a (virtual) drawing screen with a resolution of 32767 X 32767 pixels. This should be enough for most applications.

3. Multiple workstations can be opened simultaneously with the vopnwrk subroutine, which means that several physical devices (the screen, a plotter, a printer etc.) can be used by a single program during its execution.

4. The GEM metafiles described in the VDI manuals will also be available. A metafile is like the captain's log on the starship Enterprise. Any command that generates an object on an output device can be stored in a metafile, which is the same as videotaping the output device while the display is generated. So the picture can be played back at any time. To replay a videotape you need a VCR which reads the tape and generates a TV picture. The device driver program is the VCR that replays metafiles. Device drivers convert metafile commands into pictures displayed on the device they were intended for. So to display the same picture onto a printer, a plotter, a camera, etc. all you need is the same metafile and several drivers. In addition, if all programs produced metafile output, the user needs one set of device drivers, one for each output device. (No more First Word drivers, Degas Drivers etc.) Some output devices are not capable of producing the output of certain commands, so the device drivers normally ignore them.

This is maybe the most important part of the GEM since it supplies device independence and excellent

quality output (as long as the output device can do it).

Note: The concept of a metafile, or more commonly known as device independent (DVI) file is not a new idea. Programs like TEX, a professional phototypesetting system developed by Donald Knuth, GEMDRAW on IBM's, etc use metafile-type output. So you can produce the file on a PC and print it on any printer connected to any computer as long as the appropriate metafile driver exists.

The absence of the GDOS from the ST ROMs is the reason that programs like Easy-Draw and Degas Elite ask you to reboot the computer before you use them. Actually, inside the AUTO folder of Easy-Draw there is a little program named (surprisingly enough) GDOS.prg. Actually, GDOS has a companion program called OUTPUT.prg. This program uses the file ASSIGN.sys to find the list of the existing device drivers and font files for each output device. (The Easy-Draw versions of GDOS and OUTPUT are not the final releases.)

You have heard this before, but by the time you read this the GDOS should be available. So all of these long-awaited programs, like the next generation word-processors, painting and drawing programs should be rushing to market before long, armed with their multiple fonts and high quality printed output. Initially, finding device drivers for most output devices will not be trivial, but like everything else associated with the ST, not for long. The appearance of the GDOS should have another side-effect: maybe Atari or DRI should produce a decent desktop program (multiple fonts, large icon library ala IBM-PC GEM, etc.) as a favor to their poor users.

The material for this short description is derived from two main sources: Tim Oren's excellent article on the premiere issue of START magazine and the VDI manual which is part of the developer's kit. Tim's article is an excellent introduction to the GDOS, and should be required reading for anybody planning to use it. The VDI manual is a reference manual and not a tutorial, and seems to be written for the IBM-PC and you have to be careful with the documentation inside it.

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LATE NEWS FROM ATARI LONDON SHOW -- According to Ron Robinson in St. Louis: "Atari announced the 2080ATF, an ST with 2 meg of RAM, 4160ATF, with 4 meg of RAM, and the Blitter hardware. Kuma announced an expansion box to give the ST 15 MIPS (Million Instructions PER Second!) parallel computing performance. A VME (Virtual Memory Expansion) box was demoed running several multiuser operating systems. A storage OSCILLOSCOPE adapter box, weather satellite receiver, several video digitizers, Pascal, Lisp, BCPL, and Fortran Compilers were also shown."



## PERSONAL MONEY MANAGER

*Reviewed by Joe Kuffner*

Personal Money Manager (PMM), according to the packaging of this program from Michtron, is "The Atari ST Personal Accountant". Sounds like something we could all use. Finally, we'll be able to make that checkbook balance, find out where all that hard earned cash is going, and perhaps, find a way to save some money through the careful monitoring of our income and expenses. Sounds like a great idea in theory. Lets find out just how effective this program is.

PMM offers us a budgetting tool using the accounting and home economics standard of double-entry bookkeeping. This type of accounting system keeps track of financial transactions by recording not only where the money is going, but also where it is coming from as well as where it's kept (or owed!!). You are allowed to keep up to 999 separate accounts, but as the manual warns - don't create so many accounts that you are unable to keep track of their specific function. A wise warning. I found in the creation of my personal accounts, I had as many as 20 income accounts (paychecks, investments, bonds, interest, rental property, etc.) and as many bank accounts and cash-holding niches. Indeed, I began to find it very difficult to keep track of which account held which income and which expenses were paid from it. I found that when I lumped my accounts together, transaction entry was much simpler.

Before I start passing any judgements on the program, let me give you the background on my present method of tracking expenses. Presently, I have what I call a master checking account (more accurately, a ledger) in which I record, manually, all "payments" and "deposits". This provides what you might call a "short term net worth" ledger. Separately, I try to maintain a rough budget of income and expenses on which I try to plan for upcoming major expenses (holiday, furniture, etc). With these two devices, I barely keep track of what's going on around me, at least financially speaking. This method has drawbacks (time, paper, and the dreaded tax-time shuffle) and advantages (I know how it works!). PMM seemed like a good candidate to lift this paper burden and "automate" my personal financial affairs. Now lets get back to the review.

Problem number one: In order to automate a system, you need to have a system! Without it, forget trying to establish a budget on PMM. You are immediately thrust into a "system" after the program loads and you enter the date. (Incidentally, it doesn't check the computer for the date if you've previously entered it, either manually or with the clock cartridge. This is a bit of a let down.) You must begin by establishing your present financial situation in each of your accounts. This would probably be very easy if you were born yesterday. But if you were, you would neither be reading this nor buy this

program. It's a good idea to have at least your checkbook, your charge card statement and your most recent bank statement in front of you before beginning. Also, your budget should already be set up, by account. Once you have all of this ready, its time to boot the program and grab the manual.

The tutorial for this program is simply, to print out the sample accounts and reports. I'll tell you, that did not do it for me. It took at least another 2 to 4 hours of intensive effort in order to interpret the manual and to figure out keystrokes. Speaking of the manual, Michtron has done what it has done for its other programs. It has explained the workings of the program, but not the workings of a budgetting system. It is assumed that you already know how to budget and to record all your expenses - down to the penny. Frankly, I don't know too much about accounting systems. If there were examples in the manual, it would help the education process. There are none - you're on your own. One consolation is that the system used in PMM to track your expenses is rather routine. Basically, just enter all financial transactions that occur in a given period, after establishing your accounts and budget.

Now that we've learned about accounting systems (or have we?), we'll proceed to the next step - data entry. Problem number two: What the heck is a debit or credit - and don't answer too quickly, lest you make an error. Michtron's definition seems to fit the bill (pardon the pun) as long as you follow it by rote. When you establish an account, it must be in a debit, credit or asset position. The debit and credit are self-explanatory if you follow the definitions provided for each of income and expense accounts. Assets are your bank accounts (checking and savings) as well as your charge cards (more of a liability than an asset, if you think about it), and finally, your cash on hand. (Oh, did I mention you'll have to know your cash status prior to data entry. Now that is a tall order!) All of your accounts must have an account number and it need not be unique. That is, account 4 can be your savings account and separately, your checking account. The difference is established using the description field. I personally preferred giving all my accounts a different account number.

Having established your account and set up present balances, you must then enter your budget for the next year. While entering this data, make sure that you hit return in each of the fields in which you enter characters. Because the arrow keys also move you to the next data field, I found situations where I thought that I had entered a number, only later to find that when I had exited that field, that the number had changed.

While entering the data into the account base, you



will have editing choices to insert your data, locate another account, modify existing data, delete the account or move through the accounts both forward and backward. Order is established in numeric sequence of account numbers. Most of these features work in a standard way, except for the modify command. When you decide to change an account, all of the data is erased (or so it appears). The only way to get it back is to go to the particular field and hit an arrow key. POP! The data comes back to that field. You'll have to do this for each of the fields. And, don't hit the return key on a field that you don't want data changed or it will be! Another unique (?) feature is that the only way to get out of the fields and into the command menu is by entering data into the account until all of the fields are filled or to hit "UNDO" which will promptly erase all entries (if in the insert mode) or all changes (if in the modify mode). I'll tell you, this form of number manipulation requires both a good memory and plenty of patience.

Having completed the budget process, it's now time to enter transactions. Make sure you have your bankbook up to date, or at least an accurate statement of your recent transactions or you will find, as I did, that this tedious process is even more tedious. Who remembers that they spent \$2.50 on coffee and donuts this morning, \$6.59 on lunch and \$6.79 on a carton of smokes, all out of that \$20 bill that you had in your pocket this morning. Then in order to enter this detail into your ledger, I sure hope that you had created an account during set-up for "other" expenses. If you didn't you'll have to go back and set up an account for it. Have you tried to budget your "other" expenses recently? Let alone for a full YEAR ahead!! And this is just the tip of the iceberg. Remember that the purpose of this exercise is to find out where all your money's going. Well, this program requires that you already know where it's going!

Well, having entered all your transactions for the last month, it's the day of reckoning. Reports may be generated that will show you any of the following:

- a) Your Annual Budget;
- b) A ledger summary of all your Income and Expenses (sometimes referred to as actuals);
- c) Account activity listed by account, showing a budget comparison of actual expenditures;
- d) An account by account listing of all checks written in the month (a check is really a transaction number that you provide to the computer); or,
- e) A single account listing as per d) above.

Personally, I found that the reports simply showed me the data entered, without any analysis whatsoever. It was left up to me to find any savings to be had. I must admit that I was looking for something a little more sophisticated from my reports. (I might add that the

reports generated are fixed. That is, you cannot create your own format of reports.)

There are features that are missing that would help the user of this program work his or her way through the number crunching. One large feature missing is a summary of account number and description. The program will allow you to skip through your accounts during transaction entry with the HELP key. This in itself would be a nice aid, but it should not be required in order to find the appropriate account. The program demands that you know the account numbers, yet does not allow a printout of just account number and description. I had to write them down manually.

Yet another missing feature is the ability to do any simple arithmetic operations either within fields, records or in the program. Have you ever tried to balance your checkbook without a calculator? A calculator would allow you to add up a group of similar, small valued transactions and have just one entry exercise. Another, perhaps less popular use, but certainly valuable to me, would be to calculate exchange rates. I'm sure that not everyone has foreign bank accounts in their investment portfolio, but a calculator certainly would be handy in order to record transactions in the appropriate currency.

In case you were thinking, "Well why not use Cornerman, a fine product, also from Michtron which provides a calculator", it turns out that you would not be able to access it unless you stopped entering transactions, and went back to the main "menu". Only the main menu uses the GEM features. All the editing is done exclusive of mouse and GEM. With so many programs using the mouse in efficient ways, I've come to enjoy using it while editing. Too bad it's not available in PMM.

One very nice feature of PMM is the ability to automatically post transactions. An example of this would be on payday, to automatically put some money into your checking account, some into your savings account, pay some of it to your mortgage, and post the rest to your charge card. This is a useful feature of PMM and is very time saving. Too bad it doesn't actually pay Mastercard!

Well, I think you can guess my conclusion to this review of Personal Money Manager. Stay in suspense a minute longer so that I can give you a bit of my philosophy first. Computers are supposed to be efficient and productive tools. That is, when working with a computer and the right software, one has to expect better results than, say, with a manual system. At least that's what I look for in a software product. As a result of using PMM, I've found that software is still being written that, in fact, reduces productivity. I'm sticking to my manual method of handling my personal money matters. At least I only have to record my transactions ONCE - with productive results.



## CD Report

*by George Langworthy*

The September 1986 Current Notes carried the first CD REPORT column. Since then, the potential has been expanded by the addition of CD-I, Compact Disc - Interactive. This proposed standard is more complex than CD audio and CD-ROM and is a superset of both. The availability of data bases for the consumer and individual business user has lagged my expectations.

### CD-ROM

CD-ROM text-only data bases are still represented at the consumer level by only the Grolier American Electronic Encyclopedia at \$200 list. Since there is no installed base of CD-ROM drives, the prospective consumer is faced with an outlay of \$1,000 to \$1,500 for a drive and interface controller card for the IBM PC standard or the Atari ST. There are a number of text-based commercial data bases marketed costing hundreds to tens of thousands of dollars per year. Industry estimates are that there are 30 to 40 CD-ROM test and production masterings being done each month. This means that a number are trying out the technology and testing the business and commercial market.

All five of the announced CD-ROM drive manufacturers have said they will offer audio output as standard or optional by the first quarter of 1987. These are Sony, Philips, Hitachi, Toshiba and Panasonic. Atari Corp. has stated that music will be available when they introduce their production drive/player. My guess is Atari Corp. will announce at November COMDEX or January Consumer Electronics Show, both in Las Vegas.

Industry spokesmen have said widespread use of CD-ROM's awaits a "driver" application comparable to VisiCalc for the fledgling microcomputer market. It costs about \$1,000 for your first data base, since you have to buy a drive. I agree. Alternatively, several more applications need to be available, so that the consumer can have a selection. Added could be pronouncing dictionaries, sports statistics, movie reviews, Federal Tax statutes and regulations, and State Statutes, for example.

### CD-ROM PLUS DRAWINGS, PHOTOS AND GRAPHICS

The facsimile industry has data compression and expansion standards for graphics which can be used for CD-ROM. They are called CCITT Group 3 and Group 4 standards. Since an 8 1/2 x 11 black and white photo takes at least 8,000,000 bits or 1 megabyte to represent in a bit-mapped graphics format, compression is required. University Microfilms and Reference Technology, Inc. have announced retrieval work stations that incorporate a microcomputer, high-resolution display, high-speed non-impact printer, CD-ROM drive and software to "print on demand" the required information on a CD-ROM. The

Institute for Graphic Communication held the first conference to my knowledge about CD-ROM graphics. It was held in Monterey, California September 17-19, 1986 and was titled "IMAGES ON CD ROM".

Encyclopedias, dictionaries, reference books and textbooks have line drawings, graphs, and photographs. My guess is that some basic form of graphics will need to accompany the text on CD-ROM for the above to become popular. People won't settle for less than they can get at the library, except in special circumstances. Although it is not simple, this can be handled in software, or by the controller box or card that is used with the CD-ROM drive. Standards here are important, as users will balk at having different controllers for different data + graphics discs.

### CD-I: COMPACT DISC - INTERACTIVE

CD-I will get a lot of attention before actual hardware comes out. CD-I is a proposed superset of CD audio and CD-ROM. This means that a CD audio disc and CD-ROM disc (that adheres to the standards) will "play" on a CD-I drive. CD-I will have high, medium, and low fidelity audio, with the low, telephone audio recording time being many hours. Text will be available. Several thousand b/w or color television quality images can be recorded. Full motion video, such as is on the laser disc, is not anticipated on the CD-I standard. This is because the data capacity of the CD is inadequate under current and proposed data compression/expansion schemes.

The more complex multi-data stream conversion into text, into various types of audio, and into video frames means that more complicated hardware and software are needed. The Sony and Philips CD-I draft proposal specifies a Motorola 68000 microprocessor with memory. The operating system is called OS-9, a multi-tasking mini Unix-like system. It was first implemented on the Motorola 6802 for process control applications, and then on the 68000. It is currently available for consumers from TLM Systems, Fresno, CA for the Atari ST.

CD-I will be mass produced and marketed. The hardware will be reduced to a chip set and cost only \$200 more than a CD audio player. The first production model will be announced in the 4th quarter of 1987. Why so long, since CD-I was announced in February, 1986? Standards circulation and agreement will take 9-12 months. Hardware development, software development and debugging and beta testing will take an additional 9-12 months.

The implications for the consumer, business and education markets of CD-I are enormous. The vast

(Continued on page 35)



LOGIKHRON CLOCK CARD*Reviewed by H. B. Monroe*

Those of us who bought the 500 ST were very impressed with our new machine, but very soon everyone became tired of the necessity to adjust the clock each time the computer was turned on. Clearly a real time clock was needed if we did not want all of our files dated on the same date in 1985.

The SOFT LOGIK Corporation saw this need and produced the LOGIKHRON Clock Card, a real time battery powered clock, designed by Darren Kazmaler, for the ST 520. I quickly ordered a LOGIKHRON Clock Card from Shaun Fogle the customer relations officer of the Soft Logik Company.

Now as I use my ST 520 computer the correct time appears at the top of the CRT screen, and each time a file is saved the correct time and date is recorded on the disk with the title of the file.

Needless to say, I recommend the real time clock to everyone. I am very pleased with the one that I have.

The first model from Soft Logik had a cast-in-place solid body which made it impossible to change the battery. Time has shown the lack of wisdom of the original design and the new Logikhron Clock Card has a two piece black or white cover held together with four screws which makes it possible to change the battery when it goes flat in from four to eight years. No one seems to know just how long the battery (ten year shelf life) will run the clock. Those people who bought the original model as I did, may receive a new model for \$15.00 when the battery dies. The LOGIKHRON Clock Card will work both with the programs that do not use the GEM DESK TOP and with those that do.

Following the easy instructions to set up the clock, you note that the software must be present on the disk which is in the disk drive when the computer is turned on. There have been at least three versions of the software which accompanied the LOGIKHRON Clock Card. The first two each had two files "DESK5.ACC" and "CLOCK.RSC". The first one that I received would not load the clock. Soft Logik sent the second version of the software to me which did the job right. There is now a third version of the software which includes four more files and is packaged with the present model of the clock. The new software saves memory by erasing the loading files from the memory after the clock is running.

Click "CLOCK" under DESK on the desk top and a dialog box appears showing the date and time. The time in the dialog box does not update while the display remains on the screen but the clock itself continues to run. One dialog box exit button is labeled "OK" and the other "CANCEL". When viewing time in the dialog box be

sure to click the cancel button to exit as this will leave the clock set on the right time. The "OK" exit button is for the purpose of setting the clock to the time and date shown in the dialog box.

When using the Logikhron Clock Card with programs that call for you to enter the time and date, just copy the "DESK5.ACC" and "CLOCK.RSC" files to the program disk. If the program does not then automatically load the date and time, just press [return], when time and date are requested, to cause it to do so. I have tested this with Regent Word I and ST-Talk and this process worked with each program. It is also a pleasure to see the menu of CORNERMAN come up on the screen with the correct day of the week, date and time across the top. You should be able to leave the computer off for five years and see the current date and time when the computer is turned on again.

The soft Logik Co. has a wonderful customer relations attitude. They can be reached easily and always respond in a positive way. More companies involved with the computer business should take heed. The suggested retail price is \$49.95.

If you don't have a real time battery clock get one and save yourself the tiresome delay of typing in the time and date after startup. You'll like it.

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CD REPORT (Continued from page 34)

volumes produced will mean a very low price, since each one will contain a complete microcomputer with multi-tasking software. The combined microcomputer - digital television - CD player will become a reality. Digital television will have 4 megabytes of memory, a frame memory for watching a picture within a picture and have additional horizontal lines averaged between the 525 lines received off the air. This latter feature will allow substantially improved picture quality. This improvement will not require major investment in an entire new studio camera and tv signal transmission system.

A lot is cooking under the surface of the consumer and business markets in CD-ROM and CD-I today. The results will begin to show up in early 1987 for the home and single user business microcomputer. It is taking longer than I and many others thought to turn the vast potential of the CD format into reality outside the extremely successful high fidelity audio world.

G.L. Mission, KS (913) 268-8775



# ST Product List

## UTILITIES

- ALT** (\$29.95) - Lets you redefine the 36 ALT keys with strings of 60 characters.
- Dos Shell** (\$39.95) - Emulates the MS-DOS command structure on your ST.
- DFT** (\$49.95) - Transfer files between your ST and an IBM with the greatest of ease.
- Easy Record** (\$79.95) - Makes file and data handling simple for C programmers.
- Kissed** (\$39.95) - Debugger with mini assembler-disassembler and more.
- M-Disk** (\$39.95) - Our RAM-disk emulator gives you the power of an extra disk drive!
- MichTron Utilities** (\$59.95) - Repair disks, restore killed files, modify disk memory, save screens to disk and more.
- Soft Spool** (\$39.95) - Lets your ST print and compute at the same time.

## APPLICATIONS

- The Animator** (\$39.95) - Animate graphic pictures for presentations or just for fun.
- BBS 2.0** (\$79.95) - An outstanding Bulletin Board System. Easy to install, very fast.
- Business Tools** (\$49.95) - 200 attorney-prepared forms, letters, and contracts.
- Calendar** (\$29.95) - Desktop utility prints calendars, stores appointments, and more.
- Cornerman** (\$49.95) - Desktop notepad, calculator, phone book, clock and more!
- Echo** (\$39.95) - Uses X-10 modules for a wireless remote control system.
- Introduction to ST Logo** (\$49.95) - Programming tutorial includes ST Logo.

**Mi-Term 4.0** (\$49.95) - Full featured Smart Terminal program with GEM interface.

**Mighty Mail** (\$49.95) - Mailing list manager prints labels, lists, and more.

**Personal Money Manager** (\$49.95) - Financial program for the home or office.

**Super Conductor** (\$TBA) - Music program lets you record, edit and play music.

**Your Financial Future** (\$39.95) - GEM-based financial program.

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- 8 Ball** (\$39.95) - The classic game of pool.
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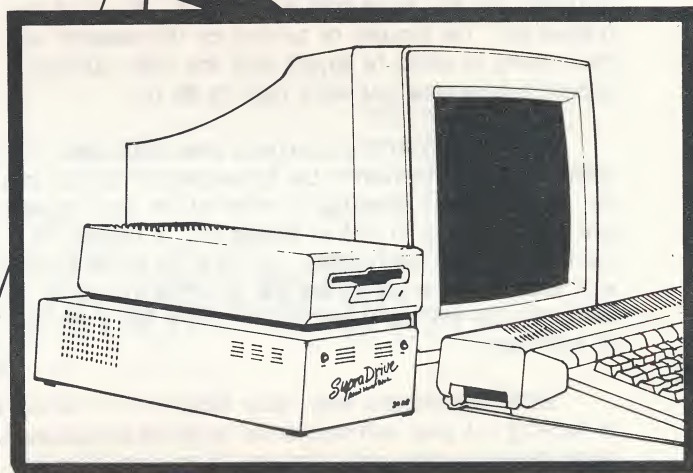
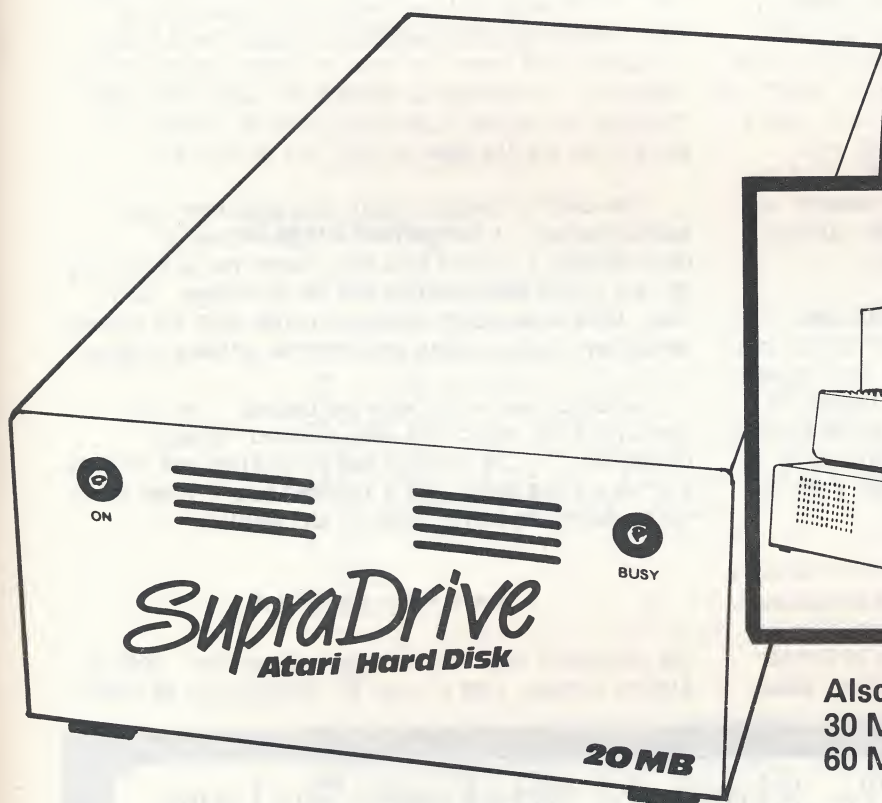


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eSTe CLOCK

- Time Off Your Hands -

Reviewed by Frank Sommers

Out of the wilds of Minnesota comes BigFoot, BigFoot Systems with stiff competition to Logikchron's timing device for the ST. The eSTe Clock is a compact gray box that plugs into the cartridge port of your ST. After you have added the eSTe Clock accessory to your disks, and used the set-clock program, you'll have nothing but extra time on your hands and the correct date and time on your computer when you boot up. For at least the next five years that is, since about then the lithium battery will be due to expire.

When you pull down the clock accessory, a small rectangular box appears with the time displayed. You place this digital clock any place you choose on your screen or click on its top left window box and it disappears until summoned the next time.

Loading of other accessories or programs that require time inserts before becoming active, e.g. ST TALK, REGENT WORD, FLASH, and others, are fed directly from "eSTe". Those of you who have adopted "BICLOCK", for its ease of altering the time when you boot the disk, before entering your programs will want to see "eSTe". I had scoffed at the need for a clock when it only took a few seconds either to type in date or time or with "BICLOCK" hit the arrow keys a few times. Big Foot has trapped me. The thought of turning on the computer and then having to pause to adjust date and time, quickly becomes a bore once you don't have to do it.

"eSTe" has carefully crafted a case that, once inserted, rests flush with the table your ST is sitting on. No accidental dropping of materials or banging with your hand can snap it off or damage it. A reassuring addition to clock cartridges. Hackers and EPROM burners will also be attracted to the 64k of EPROM available in the cartridge and the potential it offers for a variety of additions.

"eSTe" has found a home in my machine. The pleasure of knowing all your correspondence is dated and you can cease devising codes and extenders to tell you when you wrote what, (e.g. "REGN2486.OCT" for Reagan 24 October 1986), not to mention all of your program files, makes

DATAMAP COLLECTION I

"Maps and Legends" Enhanced!

Reviewed by Bill Moes

In the September issue of Current Notes, I took a look at "Maps and Legends" (M&L) for the ST. The review concluded: "If a comprehensive set of overlay files is offered, even greater utility will be unleashed."

Well, step right up, folks. The leash is now "UN".

As mentioned in the previous review, with overlay files for M&L you are able to add almost any kind of map information which can be converted to latitude and longitude. While M&L (v.2.0) made the option available and certainly added great power to the program, I found actually creating those overlays, particularly for any very large number of dot-to-dot details, can be a bit tedious and time-consuming.

To help the user save that time with some of the more obvious needs, Antic Software is now offering "Datamap Collection I" (\$24.95). It includes overlays for: all foreign national boundaries; provincial or state boundaries within Australia, China, the U.S.S.R., and Canada; and historical maps of Europe and the 13 U.S. colonies. This amounts to about 6,000 additional data points on top of the 12,000 created by M&L itself. A mouse-click and the ones you want are on your map.

The overlay concept itself is professional-level sophistication. A Navigational Flight Officer at Davis-Monthan Air Force Base near Tucson has pilots using M&L and flight plan overlays for his briefings. Gary Yost, Antic's marketing director, claims that the nearest cartography comparison is a \$1,000 IBM software program.

Combine them -- a: "Maps and Legends", b: the overlay option, and c: the just-released "Datamap Collection I". The variable map projections and infinite overlay options merge into a fused path. I see the ST having something useful, usable, and special.

\*\*\*\*\*

the investment something certainly to consider. (\$49.95, BigFoot Systems, 2708 E. Lake St. Minneapolis, MN 55406)



## The eSTe Clock by BigFoot Systems

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C H E C K - O F F !**A Comparison of Spelling Checkers for the Atari STs***by Milt Creighton*

Since the 520 and 1040ST computers were introduced a number of commercially produced spelling checkers have been finding their way into the marketplace. Some of these programs were brought out quite early and have fewer bells and whistles than more recent offerings. Still, most have unique features to offer. This article will attempt to outline the advantages and disadvantages of each program so potential purchasers will have a better idea which spelling checker will most adequately meet their needs.

During the research for this article it became apparent that investigating all of the available spelling checkers would have to include both "stand-alone" programs and those spelling checkers which are integrated into word processors as well. Two such integrated programs were considered: one was LET'S WRITE by Roger Wagner and the other was the soon-to-be-released 1ST WORD PLUS by GST Software. WORD WRITER ST from Timeworks, Inc. which also includes an 85,000 word spelling checker has not yet been released. WORD WRITER ST will be reviewed in its entirety next month contingent on its availability.

The initial investigation of the integrated spelling checker in LET'S WRITE was disappointing. The checker went through my test file and then wrote a list of suspect words to a separate file! No corrections, no in-context or even in-file viewing at all. As a result, it was decided that the limitations of this spelling checker would severely limit its appeal to anyone not already enamored of the MicroEmacs-based word processor with which it is included and it was dropped from all further consideration.

The spelling checkers considered in this comparison include HIPPOSPELL™ from Hippopotamus Software, Inc., REGENT SPELL by Regent Software, THUNDER™ from Batteries Included, and the integrated spelling program included with a pre-release version of 1ST WORD PLUS. The table on the following page provides a synopsis of the results of the comparison.

The programs were compared on 18 different points, some of which are considered basic to any spelling checker and others designed to point out the differences between them. In some instances the programs succeeded or failed to meet the criteria for very different reasons and an attempt to explain those unusual circumstances is included in the notes which are keyed to like numbered comments in the table. The criteria are discussed in lettered paragraphs which correspond to like-lettered lines in the table.

**A. Size of Main Dictionary.** Turning to the criteria themselves, the first item of comparison was the size of the main dictionary. Most of the spelling checkers include in their total word count root words and most common derivatives. "Act" and "acting" would be counted as two separate words for example. The size of the dictionary is, of course, important in a spelling checker because the larger the dictionary, the fewer legitimate and properly spelled but unrecognized words you will be asked to resolve. There is a price, however, because large dictionaries can adversely affect the speed of the checker.

**B. Size of User Dictionary.** Likewise, the size of the user-defined or supplemental dictionary is also important because it determines the number of words which can be added to the spelling dictionaries to suit your particular tastes. These words could include technical terms and proper names, for example. Some of the programs place these additional words into supplemental dictionaries while others simply add them to the main dictionary. For those programs which are copy protected, it will usually limit the size of all dictionaries to the available space on one disk, and usually a single-sided disk at that. Those limitations will generally limit the maximum size of such dictionaries to 50,000 words or less.

**C. Speed.** Speed can also be important, especially when checking long documents. Before the advent of the 16-bit computers available memory and disk drive speed of the 8-bit machines tended to limit the practical size of a single text file to 5,000 words or less, especially for word processors which used floppy disks as virtual memory. The time it took to manipulate, load, or save large files tended to be unreasonably long. The 16-bit machines with their expanded RAM and faster drives make much longer files practical. A novelist with a 150,000 word story might be able to work with as few as two or three files, for example. A fast spelling checker, one which can process many recognized words in a short amount of time, becomes important in that kind of environment. The rates given here are based on the time it took for each spelling checker to process an identical 2,300 word text file which contained no unrecognized words.

**D. Compatibility/Applicability.** Spelling checkers should be compatible with a wide range of word processors. They should work with word processors which are GEM-based as well as with those which are not. In addition, some word processors such as 1ST WORD use control characters to separate words within a file and nearly all word processors use control characters to represent such features as bold face type, underlining,



## COMPARISON OF SPELLING CHECKER FEATURES

CHARACTERISTICS/FEATURES	HIPPO SPELL	REGENT SPELL	THUNDER!	WORD PLUS
A. Size of main dictionary	30K	30K	50K <sup>1</sup>	appr 35K
B. Size of user-defined dictionary	25K	33K <sup>2</sup>	200 <sup>3</sup>	appr 20K <sup>4</sup>
C. Speed (words per sec)	104	111	27 <sup>5</sup>	330 <sup>6</sup>
D. Compatibility / applicability	good	good	good <sup>7</sup>	limited <sup>8</sup>
E. Word Counter	yes	no	yes	yes
F. Ignore repeats of same word	yes	no	yes <sup>9</sup>	no
G. Macro Capability	no	no	yes	no
H. Check words containing numbers	no	no	yes	no
I. Statistical analysis	yes	no	yes	yes
J. Display words in context	no	yes	yes	yes
K. Ability to edit dictionary	no	yes	yes/no <sup>10</sup>	yes
L. Suggests alternate spellings	yes	yes	yes	no
M. Real-time option	no	no	yes <sup>11</sup>	no
N. Display in upper/lower case	yes	no <sup>12</sup>	yes	yes
O. GEM-based	yes	no	yes	yes
P. Copy Protected	yes <sup>13</sup>	yes	no	no
Q. Available	yes	yes	yes	no
R. Suggested Retail Price	\$39.95	\$49.95	\$39.95	unknown

1. THUNDER! uses a 50,000 word hashed main dictionary (a technique for squeezing the dictionary into 80K bytes of disk space). The dictionary contains 50,000 unique words, not including common derivatives. It can be expanded to accommodate an additional 2,000 words, but, once those words are added, they cannot be removed. This very large dictionary also has an adverse effect on the speed of the checker but that is at least partially overcome by having fewer unrecognized words which are presented for resolution.
2. The user-defined dictionary in REGENT SPELL is limited to 3,000 words if you do not have TOS in ROM.
3. THUNDER!'s small supplemental dictionary is only 200 words but the user can create as many supplemental dictionaries as needed, though only one can be used at a time.
4. While 1ST WORD PLUS in its pre-release form is not copy protected and sets no explicit limit on the size of its dictionary, it is a large program and takes up nearly an entire double-sided disk. The room available on this version appears to set a practical limit to the user-defined dictionary of approximately 20,000 words. The final version of this program may differ significantly from the pre-release version.
5. The slow speed of THUNDER! results from the time it takes to search its large dictionary and the logic behind its ability to suggest alternate spellings.
6. The high speed of the 1ST WORD PLUS checker is probably due to its lack of an alternate spelling feature coupled with the size of its dictionary.
7. There have been a number of revisions to THUNDER!. Versions 1.0 and 1.1 had difficulty with ST WRITER and 1ST WORD text files. Version 1.2 is generally compatible with both and version 1.3 improves THUNDER!'s compatibility with 1ST WORD in addition to removing limitations on the "ignore repeat" and "change all" options.
8. Because the integrated spelling checker in 1ST WORD PLUS is tied to its parent word processor, it limits its compatibility with other word processors. It will work with 1ST WORD, for example, but not with ST WRITER.
9. Early versions of THUNDER! permitted the "ignore repeat" and "change all" commands to be exercised only 20 times. The version at this writing (version 1.3) allows these commands to be exercised many more times, limited only by the amount of RAM in the user's computer.
10. In THUNDER! only the supplemental dictionaries can be edited. Words cannot be removed from the main dictionary.
11. The real-time option of THUNDER! can only be exercised within a GEM-based word processor such as 1ST WORD (but not for ST WRITER).
12. In REGENT SPELL the unrecognized word is displayed in upper and lower case in a portion of the text, but it is also displayed in the manual correction box only in upper case. During manual entry of corrections mistakes with regard to capitalization are possible and even likely in some circumstances.
13. Although HIPPOSPELL is copy protected, it is possible to replace the original with a "use" copy after selection of one menu option using the original. This scheme provides some benefits to the user in addition to reducing the risk of damage to the original disk. If necessary, a number of "use" copies can be created for different needs, each with a unique 25,000 word user-defined dictionary.



Spelling checkers should be able to deal with many different word processors, including those which use nonstandard file formatting techniques if they lay claim to wide applicability.

**E. Word Counter.** Word counters simply provide a count of the total number of words in a given file. Many word processors also provide this feature but some, including ST WRITER and 1ST WORD, do not. It is a convenience rather than a necessity in a spelling checker but it is included in this comparison as a service to the reader.

**F. Ignore Repeats.** Some spelling checkers allow users to decide that certain unrecognized but correctly spelled words which are common within a file do not have wide enough applicability to be permanently incorporated in the spelling dictionary. To prevent that word reappearing as questionable on every occurrence within the file, a command is given which temporarily omits the word from further consideration. The spelling checker will ignore the word from then on until program execution has been suspended.

**G. Macros.** Macros or word expanders, once they have been defined, allow users to enter a shorthand combination (usually one or two letters) which the spelling checker will automatically expand into the defined string. Entering "nfi" in the text, for example, might result in the expansion "no further information" being directly substituted wherever the shorthand combination is encountered. This is a feature usually found in word processors or stand-alone desk accessories but is occasionally found in high-end spelling checkers.

**H. Words with Numbers.** Most spelling checkers have no ability to check words which have numbers. Either the word is automatically presented for resolution or, more commonly, the number is ignored altogether. This is not always desirable because there are some applications where a letter/number combination is deliberate (such as file names) and it helps to have a spelling checker which will proof them.

**I. Statistical Analysis.** Statistical analysis of a text file is particularly important to writers. These subroutines can reveal an author's overuse of a word or phrase, unintentional complexity in sentence structure or word selection, and even an indication of the degree of skill a reader must possess to comprehend what the author has written. In this comparison those spelling checkers which had a statistical analysis feature were all different and all had merit.

**J. Display In Context.** Displaying the suspect word in context can sometimes make all the difference in resolving ambiguities. This feature is generally considered a basic requirement for a spelling checker but is not always included because of fundamental differences in program logic. Most spelling checkers which are capable of displaying a word in context move through a

text file in a sequential fashion, comparing each word in the file to the program dictionary. The result is that each word must be separately processed. For example, each time the word "of" occurs in a file it must be compared to the dictionary. This process can slow a checker to a crawl in 8-bit machines and only the power of the 16-bit microprocessors makes possible the speed enjoyed by the programs which employ this technique in ST computers. Other logical structures are possible, of course. One of the more popular alternate designs first sorts all the words in a text file into a listing of all unique words. Each of the unique words is then compared to the dictionary with the result being that duplication of the resolution effort is eliminated, but usually at the expense of being able to view each instance of the word in context. In addition, a change to one such word is generally global in nature; that is, it changes the spelling of that word throughout the text file.

**K. Edit Dictionary.** The ability to edit the checker dictionary can be important, especially if there is a limitation on its size. In this manner, words which are never used can be excised and replaced by those which have more utility. In addition, errors tend to creep into spelling checkers when incorrectly spelled words are inadvertently added to the dictionary. Over time, being able to edit your personal dictionaries tends to be almost as necessary as weeding your garden. Some spelling checkers permit this and some do not.

**L. Suggest Spellings.** A spelling checker which suggests alternate spellings can be very useful, depending on the creativity of the programmer in deciding just what word it was you were really trying to spell. However, when some of the alternate spellings suggested don't bear even a passing resemblance to real words, it can be disconcerting.

**M. Real-Time Option.** Real-time options are relatively new to spelling checkers. They tend to be more common among those spelling checkers which are integrated into word processors although there are some stand-alone versions such as THUNDER1. These programs compare each word, as the user types it, to its dictionary, warning of misspellings by sounding an alarm, or even automatically correcting the misspelled word in the text!

**N. Upper/Lower Case.** Most, but not all, spelling checkers display the unrecognized word in both upper and lower case so the user is alerted if the word is a proper name or is the first word in a sentence. Those which do not do this create a condition which may result in the user correcting the misspelling but, in the process, inserting another error in the text by improper capitalization.

**O. GEM-Based.** The importance of whether or not a spelling checker is GEM-based lies in whether the program will work with a non GEM-based word processor. There was no problem in this regard with any of the spelling



P. Copy Protection. Copy protection of a spelling checker can have a telling effect even beyond that of other programs. Copy protected spelling checkers usually have a firm limit to the maximum size of their dictionaries since most spelling checkers are provided on a disk formatted for single-sided drives (the lowest common denominator). They cannot be transferred to disks formatted for double-sided drives which would have the effect of greatly expanding the allowable size of the dictionary. In addition, some programs which have relatively small user-defined dictionaries can make up for that shortcoming by lack of copy protection. Users can achieve great flexibility by creating multiple copies of their spelling checker with each dictionary designed for a particular need.

Q. Available. The criterion here was simply whether or not the program was available for purchase at the time of this article.

There are a number of conclusions which can be drawn from a comparison of all the available spelling checkers for the ST. One of the more interesting was the realization that even careful design of the criteria can end up comparing apples to oranges because of differences in fundamental program logic. Another was that each program had different strengths and weaknesses and each would be more useful than the others in certain applications. For technical writers, the small size of the supplemental dictionaries in THUNDER! might be a disadvantage and such writers might be well advised to purchase a checker with large expansion capabilities. For fiction writers, the many features of THUNDER! could prove to be indispensable during the initial editing process and, for novelists, a fast checker could be a real time-saver during the final brush. Of course, if you happen to be a poor and inconsistent speller the chances are that no spelling checker will own a significant advantage in speed over any other because most of your time will be spent resolving suspect words. Additionally, real-time spelling checkers can be valuable in correcting your common spelling errors by recognizing your personal misspellings and automatically substituting correctly spelled words! Having said all that, most users will still tend to favor one spelling checker over all the others and I am no exception.

The bottom line: Which spelling checker did I use to proof this article? THUNDER! (version 1.3).

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## THE ST BOOKSHELF

Reviews by Pamela Rice Frank

ATARI ST INTERNALS, 448 pages. ABACUS SOFTWARE, INC., P.O. Box 7211, Grand Rapids, MI 49510 (616) 241-5510.

Atari ST Internals, Volume #2 in ABACUS' rapidly expanding ST library, is a must for any serious ST-user's library. If you desire more than just a cursory knowledge of what makes your computer "tick," then you just gotta have this book. Speaking from a non-programmer's perspective, I'll admit that much of what was covered in the book was 'way over my head.' However, each time I open the book I discover something new. Although the book is very technically-oriented and filled to the brim with intimidating instructions, I found the explanations prior to the serious stuff to be, although far from simplistic, very understandable. Although the book lacks the index necessary to make it a perfect reference manual, I found a quick glance at the extensive table of contents was all that was necessary to point me in the right direction of finding whatever subject I was curious about at the moment.

The book itself is basically divided into two sections with the first part of the book covering ST hardware and the second, software.

The first few pages are devoted to the 68000 processor, beginning with a brief history and explanation of the chip itself and proceeding to cover 68000 Registers, Exceptions, and Connections. The ST's four custom chips -- GLUE, MMU, DMA, and SHIFTER -- are covered next. The floppy disk controller chip, the 6850 ACIA chips, and the YM-2149 sound generator are also discussed in chapter one.

Chapter 2, The Interfaces, is the one I have spent the most time on so far. Not only is it a little easier reading, it contains a wealth of interesting information about the keyboard, the mouse, the video connector, the centronics interface, the RS-232 interfaces, the cartridge slot, the floppy disk interface, the DMA interface, and the MIDI connectors. These subjects contain notes with diagrams and pin-out descriptions for those hardware hobbyists wanting to make their own cables, i.e. monitor cable (as described on page 87).

I enjoy picking up what I refer to as trivia-type information -- those facts that aren't of any real use to me immediately but are neat to know, such as the transfer rate for the MIDI is 31250 baud. My first glance at the book revealed all kinds of similar discoveries.

The book really starts getting down to business in Chapter 3, The ST Operating System. Starting out by debunking the myth that TOS is based on CP/M 64K, the similarities the ST GEMDOS shares with MS-DOS are explained. GEMDOS and other software aspects -- BIOS,

XBIOS... -- comprise most of the balance of the book. This chapter includes a table of GEMDOS error codes and their meanings. Accompanying the one-page explanation of exception vectors is a table detailing the vector number, address, and meaning. Many of the examples are also accompanied by assembly code samples.

Lastly, the final 174 pages detail The BIOS Listings, including the complete, documented assembly language source code listing.

With the exception of the missing index, I found Atari ST Internals to be an essential addition to understanding and using my ST.

ATARI ST TRICKS & TIPS, 260 Pages. ABACUS SOFTWARE, INC., P.O. Box 7211, Grand Rapids, MI 49510 (616) 241-5510.

Between the table of contents and the index, Atari ST Tricks & Tips is loaded with useful information. Abacus has recently started indicating in their ads that this book is a best-seller and I can understand why. The book contains programming hints and instructions as well as useful utilities and aids for the ST user who has progressed beyond learning his way around the system and is now ready to get down to serious work.

The first 54 pages of the book are devoted to advanced BASIC programming features and commands. The first few pages briefly describe those commands unique to ST BASIC. This is followed by a discussion of the ST BASIC commands that allow access to the features of GEM. At each stage as new terms are introduced, they are accompanied by explanations as well as definitions which are brief enough so as not to bore and get in the way of the advanced user but helpful enough so that the "advanced beginner" isn't continually forced to pause and refer to another source of definitions for assistance. For example, on page 41 section 1.2.3. The GEMSYS Command begins, "The VDISYS call is used to access the functions of the Virtual Device Interface. As you'll recall, the other major portion of GEM is the Application Environment Services, AES. To access the AES, you use the GEMSYS command."

The balance of this chapter briefly discusses the use of machine language routines within an ST BASIC and those "safe" areas of memory to place same.

Chapter 2, Utilities for the ST, includes complete explanations and the assembly language listings (as well as a BASIC program that will create the assembly language equivalent) for a current time display, print spooler,



and RAM-disk utilities. Auto-starting TOS applications and using machine language and C are also discussed.

After spending some time with this book I have found that many of the secondary explanations are as helpful as the main material. For example, while reading about the print spooler, I learned that programs placed within an AUTO folder are executed alphabetically. The documentation for the RAM-disk program includes suggestions on how that disk can best be put to use as well as such helpful hints (warnings) as "You should also not try to format the RAM disk. Doing so may damage the diskettes in drives A and B." That's good to know up front, don't cha think?

Those of you with color dot-matrix printers and/or plotters will be especially interested in Chapter 3. Chapter 4 is one long informative tutorial on the GEM programming environment. This chapter takes you all the way up to creating your own desk accessory.

While I can recommend both ST Internals and Atari ST Tricks & Tips, if you're trying to decide which book should be your first choice and your interests lie more toward a curiosity as to how things work rather than actually doing the programming to make them work, then Atari ST Tricks & Tips is definitely the book you'll want to choose. This book will satisfy your need to know as well as prepare you for any future simple debugging or modifications you may encounter. (Disks containing the source code and programs from these books are available from Abacus for \$14.95 plus \$2.00 shipping each.)

Whether you are just learning about programming, simply would like to know enough to be able to do some simple modifications to some of the PD programs you have on hand, or intend to write your own, I believe you'll find both books valuable additions to your ST resource library.

INSOFT DISK MAGAZINE. InSoft ST NETWORK, InSoft, Corporation, P.O. Box 180, Boston, MA 02123, 1-800-556-5580, 1-617-739-9012.

InSoft Disk Magazine is a monthly disk-based magazine dedicated to the ST user. They supply information in the form of programs, utilities, and news. Because the magazine is disk-based, much of the information must be printed to be of any use. Although you can read the text files on screen, you'll probably find it more convenient to have hard copies. The magazine is technically oriented, so you'll probably want this material readily available to refer to time and again.

InSoft primarily features programs written in C. The disks always include a compiled version of the program as well as the source code.

Recent Issues have featured a mailing list program, a program to dump Degas files to a Gemini 10X, Megaroids -- an excellent game similar to the 8-bit Asteroids, an Xmodem terminal program, and a 3D Wire Frame Drawing Program.

The disks I have seen so far are well organized with all related materials conveniently placed in "folders." Much of the information is in the form of an advertisement-type nature. However, the bulk of the material included on the monthly disk is educational and informative. InSoft includes extensive info on C, Midi products and applications, utilities, graphics, sound -- you name it....

A year's subscription to InSoft magazine is \$50. This includes the monthly magazine as well as a membership that entitles you to reduced prices on software and hardware. A few sample monthly issues are available in the Current Notes ST library for those of you who would like to see an issue before subscribing.

Upon booting the disk, the first file you'll want to read or print will be the README text file. This features an index/directory of all the files and folders included on the disk. NOTE: oftentimes once you get inside one of the folders the README file you encounter may simply say something like, "Read 3D.DOC first." So, it's a good idea to preview the file before you print it. Those of you familiar with the ST know that you'll get the window asking you if you want the info printed to Screen or Printer or Cancel when you double-click on a text or source code file.

My only complaint regarding the magazine so far is that oftentimes the stuff is printed with margins too narrow. I like to keep my hard copies in a 3-ring notebook and could use a wider left margin. One of things I intend to ask the next time I call is which word processing programs their text files are compatible with. I have only tried them with ST Writer so far which requires a great deal of modification/editing.

InSoft is running a special for those who join now. With your \$50. membership you can also order any software title from a (large) selected group of publishers less 45% plus \$2. for shipping plus 5%. According to Mark Allen, InSoft also runs monthly specials on most of their products. For examples, refer to their full-page ad in last month's Current Notes. All hardware prices include shipping.

Considering the cost of the other disk-included magazines available for the ST and the special prices offered, from what I've seen the \$50. membership to InSoft seems like a worthwhile investment, especially for those of you planning on additional hardware and/or expensive software purchases.



CP/M EMULATION ON THE ST -- An Overview

by John Lauer

I can remember way back when ... When we dreamed of acquiring software that would run on our Atari 800's, permitting us to be compatible with the rest of the computer world. That dream never did come true for those who owned only an Atari computer.

A modified version of the dream did appear. Through innovative Hardware design and a little Imagination, a firm by the name of SWP, INC., moved the Atari series of computers out of the non-business Atari world into the CP/M world. The CP/M operating system is the parent system from which sprang the MS-DOS operating system. The ATR 8000 by SWP provided us with the means to utilize CP/M based programs from the very sophisticated word processor, WORDSTAR, to the relational database, dBASE II. Those of us who went out on a limb to purchase the new ATR 8000, found a new world. We now had a means by which we could work at home (the Atari was a terminal only) and either send our work or carry it to the office. This was a major step for those who purchased the ATR 8000; for no other reason than it strengthened the argument for a write off of our hardware and software expenses at federal tax time for the business use portion of our systems.

When the Atari ST computers emerged, again we saw the possibilities that we might be able to run software that would be compatible with most .... Wait a minute!! Where have I had this dream before? Well, this time the Atari/ST line of computers delivered - the CP/M Emulator by Softdesign. This software has opened the door to CP/M 2.2+. Hence, we will be able to utilize the vast majority of our CP/M libraries without having to buy duplicate software. I would like to give you an overview of this software that was written by Softdesign in West Germany. Keep in mind that Atari will be coming out with their own version shortly which will be fully reviewed when it arrives. *[Don't be surprised if Atari's CP/M emulator doesn't show up in the Current Notes ST Library next month! JW]*

There are two (2) disks that supply you with the software necessary to start you off into the CP/M world. The first disk contains the emulation itself. This is a complete CP/M 2.2+ version (Z80 chip). Begin by booting this disk. Once this disk is loaded, you will see a statement to insert into the disk drive the CP/M Z80 disk. This second disk is originally formatted in the Atari ST format and then initialized by a CP/M program called 'INIT', which is found on that very same disk. Ah, ha, Catch-22. You have to have both disks on initial acquisition, otherwise you will not be able to step into the CP/M environment. The second disk contains all the necessary CP/M utility programs to get you started. Once you insert the CP/M Z80 disk and hit return you will

receive an A:> prompt. At this time you are up and running in the CP/M environment.

All of the commands that you were familiar with in the CP/M 8-bit environment are the same in this emulation. There are even a few additional features that make it more user friendly. There is a command that will allow you to take a directory of an Atari TOS disk. Furthermore, you can move and convert simultaneously a TOS file to a CP/M file. An example would be to move a program like NSWEEP3.COM from the ATR 8000 (CP/M) to the ST series. Keep in mind that through this conversion you are changing from an 8-bit environment with 5 1/4" drives to a 16-bit environment with 3 1/2" drives. Your first step is to transfer the file via hardwire (null modem cable) or through a modem. In either case you will have to have appropriate terminal programs. Once the file is received by the ST (on a standard TOS formatted disk), you can then enter the CP/M environment as discussed above. With a CP/M disk installed in one drive with the file 'TOSCPM.COM' on it and the ATARI TOS disk installed in the second drive (there is a one-drive procedure), you are now ready to begin the conversion. By executing the 'TOSCPM.COM' file, you will move the NSWEEP3.COM file from the Atari TOS disk to the CP/M disk. Execute the new file and it runs like a charm. The whole process of transferring one file should not take any more than a few minutes. You can exit the CP/M environment by typing 'EXIT' and the Desk Top will return to the screen.

Have we come full circle or taken a step backward with this emulator? That question can only be answered by the individual user. It's obvious that with the CP/M Emulator we will be able to run a host of programs. In fact just about all the programs that will run on an Osborne or a Kaypro will run on the ST. But what about quality and variety? The ST library does have some very nice software that is definitely more user friendly than the programs run under CP/M. However, when it comes to business applications, stock market analysis, statistical, engineering, or scientific software, the ST has a long way to go -- particularly those programs in the public domain.

The CP/M Emulator as provided by Softdesign is good. I have not found any bugs in it that interfere with the execution of any programs. The software allows you to work in an environment that you are accustomed to in the 8-bit world. It has opened up a library for the ST that to this day is still being drawn upon. One negative aspect was the need to ensure absolute typing accuracy. Under Gem, syntax is not a problem. But, under CP/M, correct syntax is mandatory. Now, we have come full circle.



THUNDER! -- The Writer's Assistant*Reviewed by H. B. Monroe*

When I first used my 520ST I was Impressed by the GEM Desktop, the easy disk handling and the large RAM, but I really did not appreciate what a tremendous machine I had until I added memory and I began to understand the possibilities of the GEM Desktop accessory feature. As I write this my ST is printing 20 memos for my wife to send to 20 women of the Kity Hawk Chapter of the 99s. I simply sent the memo to my spooler, a desktop feature, and it prints the documents while I use STWRITER (double-tasking) in the main memory. I also enjoy a real time clock, CORNERMAN, a ram disk, and now - THUNDER!

When I first saw THUNDER! Mark Skapinker was demonstrating his program, in the Batteries Included booth, at the COMDEX show in Atlanta. My attention was instantly caught by the sound and action as I watched the spelling checker responding to the words as he entered them into the computer. It was fantastic. I always need a dictionary when I write letters and reports and this one, ready to take up active residence in my computer, promised to fill a long felt need. You can bet that I bought a copy of THUNDER! as soon as I could. THUNDER! is, I believe, just a hint of some of the wonderful programs we are going to see as programmers become increasingly sophisticated in dealing with the 520ST. Each programmer learns new techniques from study of the work of others. As he studies other programmers work he thinks, "well I can do that better than he did" and so improves just a little more on his next effort and the increasingly superior programs are beginning to appear for you and I to use and enjoy.

THUNDER! will follow your key strokes on each word as you type it into the word processor. Checking it's 50,000 word dictionary, it instantly notifies you with sound (THUNDER!) of your misspelling. When you hear the THUNDER! you call up a form which will offer intelligent suggestions as to the probable word you intended to use. If you choose one of the offered words the program will insert the correct spelling. If the word is unique (not in the dictionary) you can add it to the dictionary if you like. You have a choice of either the Main Dictionary or the Supplemental, keeping in mind that the Main has a limited capacity (about 2000 additional words) and can not be erased, whereas numerous supplemental dictionaries can be prepared and loaded, depending on the nature of the topic, for example one for computer terms only. Another useful feature of THUNDER! is the learn dictionary. The learn dictionary has a file (3K total) which may include over a hundred paired entries. A paired entry is an abbreviation and a fully expanded matching symbol, word, or words no more than 25 characters long. Three examples are FYI and for your information. Dec paired with December and receive paired with receive. When you type a paired entry abbreviation THUNDER! will insert the complete matching material. Expansion entries for the current time and today's date

are already built in. I am sure that you can see what a handy item the learn dictionary can be to use with a word processor. Instant spelling checking and the learn dictionary can only be used with programs which use the GEM desktop. So, if you wish to use Thunder! be sure to buy programs that operate in GEM. (Any thing else will probably be completely outmoded in six months at the current rate of development of the ST software.)

THUNDER! also has a stand-alone program. The stand alone portion of THUNDER! is made up of two parts: a spelling checker for a non-GEM word processor and two document analyzers. The spelling checker looks at an entire document at a time and can use the multiple dictionaries. The two document analyzers count: characters, words, sentences and paragraphs, as well as providing a readability score indicating the number of years of schooling a reader would need to understand what you have written.

Thunder! is now available; Batteries Included began shipping to dealers in July. Thunder! is definitely a program that is up to the state of the art. If you are like me and really need a spelling checker you will like THUNDER!. It gives a lot of service for \$39.95. Now when is Mark going to add a thesaurus? I don't believe many of us can wait.

-- H. B. Monroe, 422 Lee Avenue, Wadesboro, NC 28170

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ATARI ST ■ ■ ■ ■ | |



# Music, MIDI, and You

*by Mike Lehr*

## UNDERSTANDING MIDI FOR FUN AND SMART SHOPPING - PART II

This article concludes the series written to assist you in buying products compatible with the Musical Instrument Digital Interface (MIDI). Instrument types, MIDI modes, and channel messages were discussed last month. This article discusses system messages, describes how to use a MIDI Implementation chart as a shopping tool, and summarizes what to look for in sequencer software.

### SYSTEM MESSAGES

Every MIDI transmission is either a system message or a channel message. Like channel messages, system messages begin with a pair of numbers called a status byte that identifies the kind of message being sent. System messages are usually grouped into three subcategories, called system common, system real time, and system exclusive messages (see Table 1).

**Synchronization.** Most of the system messages are used to synchronize devices. To help understand how MIDI synchronization occurs, think of each component as operating on either an "as commanded" basis or a "clock time" basis. (These terms are not standard MIDI jargon.)

Synthesizers typically operate on an as commanded basis, playing notes as soon as note on messages are received and continuing the notes until note off messages are received. Sequencers and most drum machines are operated on a clock time basis, counting musical time and playing each note of a prestored pattern after the proper number of beats.

Three things must occur to achieve synchronization: clock time devices must start at the same moment; they must start at the same place; and they must count beats at precisely the same rate.

Therefore, when two or more MIDI components are run in the clock time mode, one of them is designated as the master clock and keeps the beat by transmitting timing clock messages to which other components synchronize. Devices are started at the same moment because they all begin at the first timing clock after a system start or continue message. Moreover, the song position pointer (SPP) message provides a way to start all components at any given place in a composition.

However, it takes time to auto-locate the start beat specified in the SPP command, and devices can lose synchronization if they are still auto-locating when the continue command is issued. The MIDI specification does

not define the minimum time which should be allowed to elapse between SPP and continue messages, although a one millisecond a minimum is suggested. Therefore, check into a product's auto-locate characteristics if you foresee the possibility of working with two or more clock time instruments, such as your ATARI and a drum machine.

**Exclusive Messages.** System exclusive messages accommodate the special needs of different manufacturers and provide the MIDI language with necessary flexibility. For example, different synthesizers might load very different computer programs to produce the same sound.

The ability of your instruments and your sequencer software to both read and write system exclusive messages is important. It affects your ability to create and use libraries of tone patches, digital sound samples, etc. Of course, the ability to organize and access libraries of information is one of your ATARI's strongest points and you should own equipment that lets you capitalize on that ability.

### MIDI IMPLEMENTATION CHART

The MIDI Implementation chart is a standard form that summarizes how a particular instrument implements various MIDI functions. The MIDI specification spends several pages defining implementation charts, and they are thorough. The chart tells you which MIDI messages (functions) are transmitted and which are recognized, indicates functions that can be turned on or off, and provides important explanatory remarks.

For example, the section on channel modes shows which mode messages are transmitted and which are recognized, and what the power-up default settings are. The remarks section indicates how the instrument handles mode messages that it can not honor. Other sections of the chart provide important details about how the device implements - or does not implement - other MIDI functions:

- Channels that can be used
- Range of notes available
- Key velocity for note on and off commands
- Both types of aftertouch
- Pitch bender and other controllers, including which numbers are assigned to which controllers
- Program change messages
- The various system messages

An implementation chart should be available for your review prior to purchasing any hardware. It is difficult for salespeople to keep reliably abreast of every new or revised MIDI product. Thus, the implementation chart



Table 1. MIDI System Messages

MESSAGE	DESCRIPTION
<b>SYSTEM COMMON</b>	
Song Position	Allows you to skip to any point in a composition. Stops sequence until continue message (see below).
Pointer (SPP)	Directs Instruments playing on a clock time basis to set their internal time counters to the data value sent with the message. The data value, which is measured in sixteenth notes since the start of the piece, is also called the song position pointer (SPP).
Song Select	Stops sequence and specifies which of 128 songs or sequences will commence after start or continue message.
Tune Request	Requests Instruments to tune such that the note "A" vibrates at 440 cycles per second.
End Exclusive	Signals the end of a system exclusive message (see below).
<b>SYSTEM REAL TIME</b>	
Timing Clock	This message is MIDI's digital equivalent of clock ticking: If transmitted, 24 timing clocks per quarter note are sent. Because there are four sixteenth notes per quarter note, the SPP increases by one with every six timing clocks ( $6 \times 4 = 24$ ).
Start	Commands Instruments playing preprogrammed sequences to begin play, but not until the next timing clock is received. Allows you to synchronize drum machines and sequencers. Note: Resets the SPP to the start of the piece (SPP=0).
Continue	Also commands Instruments playing preprogrammed sequences to begin play (when the next timing clock is received), and allows you to synchronize drum machines and sequencers. Does <u>not</u> reset the SPP.
Stop	Halts all devices. Allows you to pause during rehearsal or recording without losing your place.
Active Sensing	Allows devices to verify intact connections and to turn off all notes if connection is broken. (Protects you when a connection is broken after note on and before a note off command.)
System Reset	Restores all devices to power up settings. A handy way to start over quickly when something goes wrong.
<b>SYSTEM EXCLUSIVE</b>	
Header	Signals the start of a custom message directed to Instruments of a specific brand name (regardless of any channel assignments) and identifies the maker.
Body	Variable length message, such as a program patch or a digital sound sample.
End Exclusive	Signals all units that the exclusive message is over.

can help you avoid a big mistake as well as allowing you to rate and compare Instruments quickly.

### SEQUENCER SOFTWARE

The MIDI specification does not define standards for sequencer software, and you will be making your own call, as always. Here are some criteria to keep in mind while you shop:

Standard features: Certain features are important in any kind of software, and these are listed only briefly because they are well known:

- Quality documentation
- Bug free code
- User friendly implementation
- Satisfactory speed

### Completeness of MIDI and musical implementation:

This is very important. Why pay good money for hardware with functions that your software doesn't support? Also, your software should have features are musically important, even though they are not part of the MIDI specification. One such feature is the ability to adjust the tempo.

Editing and library capabilities: Like other computer users, computer assisted musicians are managing information. Your ability to create beautiful music depends directly on how productively you can massage and combine raw data. Some capabilities to look for and evaluate are:

- Insert/delete ("punch in/punch out")
- Search/ search and replace
- Merge tracks or parts of tracks ("bounce")
- Independent editing of MIDI parameters
- Input filtering
- Number of tracks
- Sound reinforcement

Independent editing of parameters is very important, because it allows you to polish a composition one aspect at a time, while preserving the things you like. For example, you might like a melodic line and want only to test the melody at different volumes.

Input filtering is especially useful with continuous controllers, such as pitch benders, because these controllers consume memory rapidly. Packages may allow filtering prior to input or after input but prior to playback.

A large number of tracks is useful because different tracks can be used as separate work areas. Some packages allow tracks to be saved independently and reused in different compositions, which is convenient. However, think over how many tracks you really need if having more tracks means giving up some other important feature.

Sound reinforcement techniques are to MIDI what image enhancement is to video. Digital delay and prelay



are often cited examples; these techniques let you achieve effects such as chorus or reverb.

Ease of data entry: You should be able to enter data in real time or step time. Real time data is entered in tempo, normally from an instrument. Be careful, because some packages compromise your input in ways beyond your control, such as by making all notes of equal duration. Step time data entry is entered out of tempo (as slowly as you like). Other useful data entry features include:

- A metronome
- Countdown capability

Print and display features: There's not much point to entering data easily if you can't see what you've got. Some things to check for are:

- Some sort of print capability
- Ability to print or display in normal music notation
- Fast forward/reverse
- Mute/solo
- Auto correct

The mute/solo functions let you turn specific tracks on or off. Thus, you can test variations easily or focus on a specific track.

The auto-correct feature lets you round off the displayed values of real time input to whatever precision you like. Good playing is characterized by nuances that flavor the music nicely but look like notational catastrophes. The best form of auto-correct lets you control the display without changing the values stored in memory.

Tape synchronization: Tape synchronization is an increasingly hot topic because it is important in multitrack and in video sound track recording. In fact, a system common message dedicated to tape synchronization has been proposed and may be an adopted revision to the MIDI specification by the time you read this (the MIDI Time Code).

Other methods of tape synchronizing are already available for MIDI. They are currently expensive; they are advanced capabilities; and they are apparently being superseded, at least for commercial use.

It follows that any software purchased with tape synchronizing in mind should be purchased carefully. Such software may well meet all your needs, but don't buy it unless it does meet them.

#### CONCLUSION

Familiarity with the MIDI specification allows you to understand the musical capabilities of MIDI hardware. These capabilities are well summarized in the MIDI Implementation chart. Understanding what the hardware does is helpful and necessary in evaluating sequencer software. However, additional criteria should be

considered in evaluating sequencer software.

The last two articles hopefully leave you confident and knowledgeable about buying MIDI products. Additional information is available from the International MIDI Organization, a user's group consisting of end users, retailers and developers. Serious enthusiasts should belong. Forty dollars per year buys you access to their friendly, knowledgeable hotline, and a subscription to their newsletter. That way, you find out about imminent changes (like the MIDI time code) before they hit the street and before you end up holding a possibly obsolete bag.

Finally, there are always books. Browse your book or music store shelves. If you run across the title MIDI for Musicians by Craig Anderton (Amsco Publications, New York, 1986), look it over and see if you also find it informative.

Happy shopping.

#### TIME TO RENEW?

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LOGICAL DESIGN WORKS: Basic Compiler for the 520 ST*Reviewed by Stephen Eitelman*INTRODUCTION

Another Basic compiler for the 520ST has been introduced, this one by Logical Design Works in California. Although this compiler came out after two others, it is superior to them in virtually all aspects. It still lacks somewhat in speed, but is nonetheless faster than its competitors in all tests except printing to the screen and faster than ST Basic in all respects, including trigonometry. Furthermore, the LDW compiler will compile ST Basic, so that at long last, a version of Basic is available for the ST that features both an interpreter for easy debugging and a compatible compiler for speed and execution from the desktop. It retails for \$69.99.

INSTRUCTION MANUAL

The manual consists of 81 pages but lacks an index. The table of contents, however, is sufficiently detailed to answer most questions quickly. The manual is divided into three sections: Part I is the Users Manual and is quite adequate, containing a complete menu description (the compiler is GEM based), is well written and easily understood. It contains a fair number of examples and very thorough explanation of file manipulations. Part II is called the Technical Report and is as obscure and difficult to understand as Part I is clear and useful. Part II is clearly only for advanced programmers thoroughly familiar with sophisticated software development. For the rest of us mere mortals, it is 24 pages of material that can be safely ignored. The third portion of the manual contains five appendices listing the many error messages and explaining them. I found this to be a big help for correcting mysterious errors.

There is an entire chapter devoted to explaining the details of language implementation. This chapter is remarkably complete. Another chapter I especially liked is chapter 6 entitled "Practical Advice". This chapter is devoted largely to a discussion of double precision versus accuracy. It is quite enlightening. More about this later.

The Customer Use Agreement requires that a Developer License be obtained for distribution of programs compiled with this product. The license is not required for programs intended for the public domain or for publication in magazines.

COMMENTS ON COMPILER OPERATION

The package contains two disks, the compiler and the linker. The compiler is copy protected, but two backups are permitted. The backups do not run independently, however. The original compiler disk is still required

when loading the compiler. The copy protection results in two loud buzzes during the loading process. As a Commodore 1541 disk drive user, this makes me very uneasy. Such noises were followed by both my 1541 drives being knocked out of alignment. I am not aware of any such reports on the Atari drives. Still...?? [Note: LDW has informed Current Notes that upgrades (available to REGISTERED users at a nominal cost) will NOT be copy protected. JW]

Source code (what the programmer writes) can, in addition to using ST Basic, be written with any editor that produces ASCII files. Thus, Micro-EMACS, Regent Word, TextPro, ST Writer, and 1ST Word can be used. (Note: In previous compiler reviews, I said that 1ST Word could not produce ASCII files. This is wrong. Just switch off WP mode under the Edit menu. Apologies to GST.) For experimenting with changes to simple programs, the various word processors seem to be more efficient than ST Basic, although this is a pretty subjective judgement. The capability to interactively debug a program using the ST Basic interpreter is such a huge improvement over the Philon and Softworks compilers that this one feature alone puts this compiler at the top of my list by a long way. The GEM-based compiler and greater execution speeds just put its first place ranking that much further ahead of the other two.

## Other features I liked:

- Error messages stay on the screen until return is pressed.
- Audio cues (from Beethoven, no less!) are used to signal the end of compilation and linking.
- Double precision is available, including trig, and exponential functions; about which, see the accuracy discussion later.
- Array size is limited only by available memory.
- Line numbers are unnecessary. Now this usually means that the compiler won't recognize out-of-order lines when numbers ARE used. LDW, however, generates a compiler syntax error if out-of-order line numbers are encountered.
- ST Basic graphics and sound commands will compile, although the timing for sound commands may require adjustment. This feature is unique among the three competing compilers.
- Compiling and linking produces stand-alone, executable machine code that will run right from the desktop.



- The compiler and linker will run on systems with only one single-sided drive.
- VDI and AES calls are permitted.
- Reasonable sized files (20K or so for small programs) are produced.
- There are numerous examples on the disk that are well commented.
- Errors in the ST Basic Sourcebook are pointed out in the LDW manual.

Upon receiving the package, I was, as usual, very anxious to try the compiler out with a minimum of reading. The table of contents lists a compilation procedure for one and two drive systems. The procedure is relatively straightforward, including creation of the working compiler and linker disks. The files for the compiler disk are a bit scattered between the two original disks, but are all present. The compilation procedure requires that the original compiler be in drive A and the working copy be in drive B to allow for checking for copy protection. After loading, the file to be compiled is selected. The screen is divided into two halves. The upper half lists any errors detected during compilation and the bottom half is a status report containing the name of the file, the drive it is on and the various compiler options that have been selected. Syntax errors are placed in a file with the original file name and a .LST extension. Compilation of short programs requires about one minute. Once compilation is completed, a little Beethoven is played (really!) to signal for the linker disk.

The linker appears to be a Digital Research, Inc. linker that is used with the Alcyon-C compiler in the Atari development package. It runs reasonably quickly, taking about five minutes for a small program. At this point, various obscure error messages may be encountered; the most common ones are explained in the back of the manual. So if the disk is full, one can discover this without recourse to phoning the company. When the compilation and linking process is successfully completed, a little more Beethoven is played along with a screen message from him (!) and then a wait for a return to go back to TOS. Double-clicking on <filename>.PRG will load and run the program.

#### SPEED COMPARISON

Several benchmarks were run: a trig test that squares the cosine of an index that is allowed to vary from 1 to 10000, the SIEVE of Eratosthenes (for finding prime numbers), a repetitive multiplication and division calculation, and a random string generation, sort and print test. The sieve and calculation tests are both from BYTE magazine, May 1985. I have shown all three competing Basic compilers, ST Basic and even Lattice-C results for the math tests. Clearly, the LDW compiler is

the speed winner in most categories, beating out even the C-compiler in two of the three math tests. Being a total novice at the C-language, I did not even attempt to translate the string tests into C.

Comparison of Program Execution Speed  
(Times are in minutes:seconds)

Program	Speed Test					
	A	B	C	D	E	F
LDW	0:33	0:21	0:04	0:08	0:21	1:34
Softworks	3:18	1:34	0:22	0:24	0:69	0:37
Philon	1:01	0:48	0:08	2:04	2:25	0:36
Lattice-C	3:53	0:01	0:26	XXXX	XXXX	XXXX
ST Basic	0:38	4:11	0:31	1:09	5:04	1:45

#### Test Description:

- A:  $1 \leq i \leq 10000$ ,  $y = \cos(i)$ ,  $x = y*y$  [Giving  $\cos(i)$  squared, but faster]
- B: BYTE magazine sieve, 10 iterations,  $n = 2047$
- C: BYTE magazine Calculation benchmark
- D: Generate 1000 random strings
- E: Sort random strings
- F: Print sorted strings to screen

The C-language version of the sieve program came from the back of the Lattice-C manual. All I had to do was modify two numbers to correspond with those used in the Basic tests. In all fairness to C, the math tests were run in double precision while the Basic compiler tests were in single precision, so there is an element of apples and oranges comparison here. The reason for double precision in C is that is how the math functions are done by the compiler. There just isn't any easy way to force it into single precision.

Note that the LDW compiler is the only one that manages to run faster for the trig test than ST Basic - and then just barely. Remember the IBM PC test mentioned in the last article (Softworks review)? It got a speed increase of almost a factor of six. So LDW speed is still nothing to write home about in math intensive applications.

#### ACCURACY

The LDW manual puts considerable emphasis on the matter of accuracy versus precision. What this means, it turns out, is that while it is possible to force a math operation to print out lots of digits, they may not all be correct. This, the authors say, is because Alcyon-C (which the compiler was written in) does not support double precision. They have added honest-to-goodness



double precision functions for trig, logarithms, square root and exponentials that generate 13 significant figures, all of which are accurate. Not having much poetry in my soul, I got worried about the accuracy of the other compilers. I checked the sine and cosine of 45 degrees for Softworks, Philon and Lattice-C compilers. This test may not be exactly comprehensive, but Softworks and Philon did just fine - accuracy commensurate with the number of digits. But mighty Lattice-C flunked: the cosine of 45 degrees printed out 14 digits, of which only the first five were correct!

#### CONCLUDING THOUGHTS

The LDW Basic compiler is clearly superior to its two competitors in virtually all respects except for speed of printing to the screen. This may affect graphics effects in games; the forthcoming blitter chip should fix that. Otherwise, if you really must have a Basic compiler, then buy this one. It may not have quite the math speed you expect, but is in all other respects a fine Basic language compiler.

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M I C R O C - S H E L L*Reviewed by Michael F. (Mike) Brown*

MICRO C-SHELL, developed by Beckemeyer Development Tools, is a command processor that provides an alternative to the GEM interface for the Atari ST. The GEM interface, supplied with the ST, is an easy to use system that has many benefits you are already familiar with. I will try to give you a feeling for the benefits of MICRO C-SHELL. The version of MICRO C-SHELL that I am reviewing is version 2.6.

BACKGROUND

This command processor got its name from a command processor on the popular UNIX operating system, `cs`h, which it resembles. This fact, in itself, may be enough for some people to want MICRO C-SHELL. UNIX is an operating system that is found at many universities and research organizations.

The beauty of the UNIX `cs`h is that it provides a set of (sometimes simple) tools, which can easily be used together to perform some very complex tasks. Another feature of the UNIX `cs`h is that it is easily customized and extended to meet the user's needs. Fortunately for us, MICRO C-SHELL brings these features to the ATARI ST.

COMMANDS

There are two classes of commands in MICRO C-SHELL (from now on I will refer to MICRO C-SHELL as `mshell`): builtin commands and non-builtin commands. (See the table on the opposite page.) This simply means that some commands are recognized and processed by `mshell` itself (i.e., builtin). If `mshell` does not recognize the command, it tries to find a program on the disk to execute. This can be a .PRG file, .TOS file, .TTP file, or a .SH file (more on this later). If it finds such a program in the current directory, that program will be executed passing any parameters supplied on the command line. Thus the commands available to the user are limited only by the user's imagination (and disk space)! If a file was not found in the current working directory, other directories are searched. These directories and the order in which they are searched are fully controllable by the user and contained in a variable called `PATH`. I'll introduce the use of variables later. I feel that there was a good trade off between commands chosen to be builtin commands, which run faster since no disk accesses are required, and non builtin commands.

SHELL FILES

`Mshell` allows command to be read from a file on disk (i.e., files with the extension .SH). These kind of files are called batch files in some command processors. This is extremely useful for repetitive tasks such as compiling and linking programs, copying certain files to

a ramdisk, etc. To facilitate this, `mshell` provides a mini programming language with statements such as: IF-THEN-ELSE, FOREACH, WHILE, and GOTO label. You can have local variables in the .SH file and pass parameters to the .SH file. Parameters are words on the command line that follow the name of the command or program. Local variables can be both alphanumeric or numeric (i.e., a string or a counter variable). There are also some special 'global' variables that contain such information as the current directory name, the string used for the command prompt, and the status of the last command executed. The builtin and non-builtin commands mentioned above can be combined in the .SH file with the programming statements to produce some very sophisticated command procedures.

To execute one of these .SH files, simply enter the name of the file as a command (followed by any required parameters) -- that's all there is to it! Let's pretend we had a .SH file that allowed us to search a particular file, called `NOVATARI`, for names of people and to display all lines in the file that match a specified name. With `mshell`, you would enter the following command (assuming you called your .SH file `TEL.SH`):

```
% tel joe seward
```

Since 'tel' is not a builtin command, the disk is searched for a program or a .SH file with that name. In our case it will find a .SH file and start taking further commands from that file. By the way, the '%' character is the prompt for `mshell`, which is easy to change if you don't like it since it is a global variable. See figure 1 for a listing of the `tel.sh` file.

The first few lines are comments (denoted by the '#' character) and are ignored by `mshell`. As you see on other lines, end of line comments are supported as well. The first 'executable' line SET's a variable, `COMMAND`, to the first parameter passed to in on the command line, which was 'joe' in our example above. Next is an IF statement that checks to see if there was a 'first parameter'. If none was found, a message is displayed and we return to `mshell`. If parameters were specified, we loop through each parameter assigning them to a variable called `NAME` (that is the function of FOREACH). Next we use the builtin command 'grep' to locate lines that contain `NAME` in the file `NOVATARI`. The '\$' preceding a variable tells `mshell` that the value of the variable is to be used and not a simple string consisting of the variable name.

As this example shows, `mshell` allows quick 'tools' to be written without using a programming language (e.g., PASCAL, C, etc.) at all. Further it demonstrates how the simple tools provided with `mshell` can be used as



MICRO C-SHELL COMMAND SUMMARYB U I L T I N   C O M M A N D S

ALIAS    Allows the substitution of a name for another name or list of names. Commonly used for abbreviating commands. (See the example below)  
 BREAK    Causes execution to resume after the end of the nearest enclosing FOREACH or WHILE.  
 CAT      Display one or more files to standard output (CATenate).  
 CD        Change default Directory.  
 CP        Either CoPIes files to a directory (folder) or makes a copy of a single file giving it a new name.  
 CONTINUE Continue execution of the nearest enclosing WHILE or FOREACH.  
 DF        Prints the number of free bytes remaining on a specified disk or the current disk.  
 ECHO      Parameters to this command are displayed (ECHOed) on the console.  
 FOREACH   Implements a simple FOR loop (common to many languages)  
 GOTO      Mshell will take the next command from the line immediately following the label specified on the command line.  
 GREP      Searches standard input (or files) for a pattern specified by the user and displays matching lines on standard output.  
 HISTORY   Displays the last 32 commands that you entered to mshell. Note that you can easily 'edit' previous commands (on the outside chance you might have made a typo!) and execute them again with minimum keystrokes. This is a nice, time-saving feature.  
 IF        Implements a simple IF/ELSE IF/ENDIF statement.  
 LOGOUT    Exits from mshell back to GEM.  
 LS        List the specified directory to standard output, various options control what is included in listing and its format.  
 MKDIR     Creates (MaKes) a directory.

MORE      Writes one or more files to standard output a screenfull at a time. Also allows for strings to be searched for, skip to the next file, display the name of the file being displayed, etc.  
 MV        Renames (MoVes) files.  
 PWD       Writes the name of the current directory to standard output. (Print Working Directory)  
 RM        Deletes (ReMoves) files  
 RMDIR     Deletes (ReMoves) a DIRectory.  
 SET       Allows the display of variables or assigns new values to them.  
 UNALIAS   Removes the named alias from mshell's memory.  
 UNSET     Removes the named variable from mshell's memory.  
 WHILE     Implements a simple WHILE loop.

N O N - B U I L T I N   C O M M A N D S

CHMOD     CHange the MODe (read/write, system, etc.) of a file.  
 CMP       CoMPare two files and reports where differences occur.  
 DATE      Display or change system date/time.  
 DIFF/SED   Two powerful tools that compare two files (DIFF) and produce a set of commands (to SED) to make the first file look just like the second file.  
 HEAD      Writes the first few lines (controllable by the user) of each file to standard output.  
 LPR       Lists file (prints) to the PRinter.  
 PR        Produces listings of files with page breaks, headers, etc.  
 TAIL      Similar to HEAD but works on the last few lines of a file.  
 WC        Displays count of characters, words, lines, and pages in a file.



Figure 1: Sample Shell File - tel.sh

```
# -----
# This shell file will search through a data file
# (NOVATARI) for names of abbreviations of names and
# display the line on the console
#
# Usage: TEL name { name }
# Results: Displays line containing name on console
#
# First check that parameters were given. If not
# give a usage message and quit.
#
set command = $1 # Assign command to 1st parameter
if ($command == '') then # If there is not a first
# parameter, give usage info
echo
echo "Usage: TEL name { name }"
echo "Results: Displays lines containing name in
file: NOVATARI on the console."
echo
else
#
# Now loop through parameters looking for the name
# - Assign each shell parameter to 'name'
# - Use builtin command grep to find 'name' in file
foreach name ($*)
grep $name NOVATARI
end
endif
# -----
```

building blocks for more useful and powerful tools.  
The output from the above example looks like the following:

Joe kuffner, vast president, (703) 759-2507 joe  
waters, current notes managing editor, (703) 450-4761 ed  
seward, president, (703) 960-6360

The file NOVATARI is a simple ASCII file that consists of lines as the above.

Before we leave the topic of .SH files, I'd like to point out one very important .SH file. This is a file called LOGIN.SH. Whenever you run mshell, it looks for this file and executes the statements contained within that file before the prompt is issued. This allows mshell to be customized automatically for you each time you run it.

### REDIRECTION

Most of the commands above read from standard input and write to standard output. Standard input is normally the keyboard. Most of the commands listed above expect to receive their input from the standard input. Standard output is normally the monitor. Again most of the commands listed above perform some action and display the results of the command on the standard output device.

Mshell allows you to change or redirect where the input is read from and where the output is written to. This means that input normally read from the keyboard can be read from a file. It also means that the output of one command can be used as the input of another command. This is accomplished by something the UNIX world calls PIPES, which I'll show an example of below. Additionally, output normally sent to the monitor can instead be sent to a file or a device (such as the printer). Consider the following example that makes use of both PIPES and redirection of output:

```
% ls -lr a:\ | grep -v prg > stuff.txt
```

The LS command is used to list files of a specified directory (a:\ in this example) in a detailed form and to list all the directories found within the specified directory. This is accomplished by the sequence '-lR'. The '-' character denotes that the following characters (up to a space) are options and not a parameter. The letters 'l' and 'R' describe the options mentioned above. The output of this command would normally appear on the monitor, however I have 'PIPED' its output into the 'grep' command. The 'grep' command will take this input and produce as output all lines that do not contain the string 'prg', which is the purpose of the '-v' option. Instead of this output being sent to the monitor, I've told mshell to send it a file called 'stuff.txt'. Note that I could have just as easily sent this output to the printer by replacing 'stuff.txt' with 'LST:'. One obvious benefit of this is that I can simply include that file as part of this review! I admit that the above command line is cryptic and if that bothers you, change it! The ALIAS command will allow just that type of thing. Let's say you want to do this repeatedly and would like to enter the command: NOTPRG. Easy. Just enter the following command:

```
$ alias notprg "ls -lR a:\ | grep -v prg > stuff.txt"
```

and that is all there is to it! If you do this often, put it in LOGIN.SH so it will always be available to you whenever you run mshell. Getting back to our example, the following is a portion of stuff.txt:

```
auto\          0  8-08-86 16:51:04 ----D-
bin\           0  7-10-85 15:40:22 ----D-
desktop.lnf    472 11-20-85 0:01:14 -----
doc\          0  7-10-85 17:59:42 ----D-
login.shl      74  9-06-86 10:46:44 -----
microcsh.rsc   186 11-20-85 0:00:48 -----
Grand Total of 27 files (323849 bytes, 316 K),
3 directories
```

Column one of the above output shows the file name or the directory name, which are determined by the '\' character following the name. The second column is the size of the file in bytes. Following this is the date and time the file was last modified. The last column is a column for attributes. Attributes include such things



as D for directory, R for read-only, etc. I cut most of the file out from the inclusion in this review for space reasons, which is why you don't see 27 files.

#### OTHER FEATURES/FACTS

1. Multiple commands can be entered on one line, being separated by ';'.
2. Two versions of mshell are provided. One can be placed in the AUTO folder to run automatically upon booting from that disk. This version is not capable of running GEM applications. The other, which can not be placed in the AUTO folder, is capable of running GEM applications.
3. The AUTO-able mshell file is 64K, while the GEM version is 68K. The mshells, non-builtin programs, sample .SH files, the tutorial files, and miscellaneous files total 30 files for a total of 317K of disk space on the distribution disk.
4. There is an on-line tutorial set up to run when you boot with the disk, or hopefully a copy of the disk (since its not copy protected). This is a very nice and very helpful introduction for a user who has not seen UNIX before.
5. "TYPE AHEAD" is supported by mshell. This allows you to enter another command before mshell displays the prompt, which is another time saving feature.

#### DOCUMENTATION

The documentation comes in a small binder with 50 some odd pages, including the before-mentioned tutorial. A bibliography of UNIX related publications is included as well as an Index. The documentation is terse for the most part and you may find that you will have to experiment with some of the features to understand exactly how they work.

#### CONCLUSIONS

MICRO C-SHELL is a powerful tool that allows you to perform some operations (such as copying files, finding out what is on another disk, etc) faster than using the GEM interface. This is because windows do not have to be redrawn on the monitor, etc. When a program is finished running under MICRO C-SHELL, you immediately get the prompt. Beyond that, it has many features that can not be found in the GEM interface (such as .SH files, useful tools, customizing the interface, adding your own 'commands', the history of commands, redirection, etc). I have found MICRO C-SHELL to be worth every cent it cost in terms of productivity and ease of use. No, I don't use it all the time, at least not yet. A hard disk, which I don't have yet, would greatly increase its usefulness in so far as I don't give up a disk to use it. A hard disk will also further increase the speed at which the non-builtin commands execute. However, when I'm

writing programs or running lots of programs to accomplish something, it sure beats the GEM interface. I would highly recommend it to anyone who uses the ST for anything more than game playing. My guess is that people who will benefit the most from MICRO C-SHELL are those who are familiar with the UNIX operating system and those who are writing programs (which requires repeatedly running several programs). However, its uses extend well beyond...how far is up to you.

MICRO C-SHELL is a product of: Beckemeyer Development Tools, 592 Jean Street #304, Oakland, CA 94610 (415) 658-5318. Suggested Retail: \$49.95 ( Can be found for less )

Mike Brown, who works at SofTech, is managing the software development effort for a retarget of the Ada programming language to a standard Navy embedded computer. Prior to joining SofTech, Mike worked for over six years with Digital Equipment Corp, located in MA, maintaining and developing systems software as both an engineer and a manager.

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Z O O M R A C K S -- A Visual File Manager*Reviewed by Phil Hoehlein*

ZOOMRACKS is a highly visual file manager based on the metaphor of a time card rack. The emphasis is on the "physical" manipulation of files and records on the screen. One can "zoom" among these files and records and "zoom" in on a particular record. This maneuvering is done mainly at the keyboard, through the extensive use of mnemonic single letter commands (including macro commands) and function keys. ZOOMRACKS makes only marginal use of the mouse. It does not take advantage of the GEM Interface.

Up to nine user-created racks and one system-supplied directory rack can be viewed and manipulated on the screen at any one time. A "zoomrack" (rack) is the equivalent of a file in a more conventional file manager and, in fact, is stored on the disk as a file. As racks are created or selected from the directory rack, they are arranged as vertical sectors running from left to right across the screen. If only one rack is activated, it will occupy the entire width of the screen. Two racks will split the screen, while with three racks, each will use a third, and so on up to the maximum of 10 racks.

Each rack is composed of as many "quickcards" as your RAM can accommodate. Each card (record) can have as many as 27 fieldscrolls (fields). Each fieldscroll can hold from one character to 250 80-character lines of text. As these cards are created and inserted into a rack, they are automatically sorted alphabetically by the first letter(s) of the first word contained in the first fieldscroll of the card. (You can override this default mode, however, and select any single fieldscroll within a quickcard to perform this sort function for the entire rack).

This is an important option to have because of the way multiple cards are displayed in a rack. True to the metaphor of the time card rack, only the first line of a quickcard is visible when you display the zoomrack which contains it. Obviously you want to put your more important or descriptive fieldscrolls on the first line of your quickcard in order to make the most of scanning the zoomrack. There will be times, however, when you want to sort on a field not situated on the always-visible first line. You could reformat your cards to accomplish this, (ZOOMRACKS allows you to rearrange existing fieldscrolls), but having the option of designating the sort field of your choice allows you keep the card format independent of the order in which the cards will be displayed.

Formatting or creating quickcards is accomplished almost exclusively through the keyboard rather than a keyboard and mouse combination. A command line with command choices and help windows aid in this process and

are available throughout ZOOMRACKS. The format that you create for your first quickcard is applied to all subsequent cards for that particular rack. Since you can play with as many as nine more (not counting the directory) racks at one time, this is not too much of a constraint.

Through the use of function keys as well as the mouse, ZOOMRACKS allows you to easily and rapidly go from a panoramic view encompassing multiple cards within multiple racks down to viewing a single card in one rack and vice versa. This is probably ZOOMRACKS' most useful and unique feature. You can jump from rack to rack, (moving either left or right on your screen) or go up or down within a rack from card to card either one card at a time or in leaps of 10. You can literally let your fingers do the walking through this file manager! ZOOMRACKS excels at letting you visually scan and manipulate your records as "physical" entities. It has features which allow you to readily copy and move individual fieldscrolls, quickcards (or just their format) and entire racks.

Unfortunately, ZOOMRACKS is a disappointment when you need to manipulate your records using the conventional select and sort approach. Its selection feature is a barebones one which really limits the usefulness of ZOOMRACKS. For example, you can only select on the first line of just one fieldscroll at a time. Yet you are allowed to have up to 27 fieldscrolls each with up to 250 lines of text! One of the suggested uses for ZOOMRACKS is for recipes. A common approach would be to have a field listing the ingredients. But you would only be able to search for the first ingredient on the list! The same would apply to other suggested uses for ZOOMRACKS such as bibliographies and research notes. Here you need the ability to do global searches for key words. All you get is a simple string search function which does not use either wildcards such as ? or \* nor comparison operators (greater than, not equal). Probably the single greatest improvement to an upgraded ZOOMRACKS lies in this area.

There is another major area for improvement. Not counting any macro commands that the user might add, there are literally dozens of command combinations on the keyboard that need to be mastered in using ZOOMRACKS. Many of these command sequences are awkward to use and difficult to remember. In short, ZOOMRACKS needs to make use of GEM along with more use of the mouse. The use of the scroll bars alone would eliminate the need for several of the keys currently dedicated to maneuvering around this visually oriented program. A cluttered command line/menu which often does not show all the command options unless you keystroke your way over to view them, should be replaced by GEM's dropdown menus.



Increased use of the mouse would also reduce the awkwardness of ZOOMRACKS, particularly in the area of formatting and reformatting quickcards.

One area which has shown some improvement is the documentation. The "ZOOMRACKS Instruction Manual December 1985" is pretty shabby. Make sure that you get your hands on the "ZOOMRACKS Users Manual January 14, 1986". It's not great but it is definitely better. The very least that future versions of ZOOMRACKS should provide are reference aids such as keyboard overlays for all the commands and function keys.

I really have mixed emotions in evaluating ZOOMRACKS. I like the idea of being able to rapidly scan and physically manipulate records. In its present form ZOOMRACKS is useful but frustratingly limited. For Roladex type needs such as phone or mailing lists and tickler files it's probably fine. You can print up labels etc. But for more conventional file management tasks it does not have many of the capabilities found in even a basic program such as PFS FILE. In my opinion it's a step in the right direction but it's still only a step.

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The following two quotes are from the September 1986 Issue of "Capital Computer Digest".

"The Software Publisher's Association is offering \$100 for information about any U.S. or Canadian computer bulletin board allowing copyrighted software to be downloaded. Most don't, but if you know a law-breaker, contact (202) 452-1600 for details."

and

"Software publishers won a major skirmish against unauthorized copying last month in a 'raid' on a bulletin board system in Cincinnati. The board had been running more than 40 megabytes of copyrighted software for Atari users, all illegally. The Software Publisher's Association reported the closing as a joint effort of 12 publishers and software developers. Association director Ken Wasch expects the closing to be the first of many, stating, 'fighting piracy is still one of the principal objectives of our organization.'"

These quotes are provided both as current news and as a warning.



MEAN 18 : Meaner than LEADER BOARD ?*Reviewed by Frank Sommers*

If it was fall, and you were in the Bois de Bologne in Paris, the course you might be looking at could well be one of MEAN 18's four courses. Except for the relatively sharp graphics of the title screen (where a little ole gopher sticks his head up through the ground to assure you where you are) and the sharp well designed club house, golf cart and club accoutrements that pop up next, announcing Bush Hill Country Club, the main golf screens have a watercolor effect to them. The tee marker on each hole not only announces the distance and par but is itself a miniature early French impressionist-style painting of the hole.

A click and the hole stretches out before you, with a little golfer in front, imposed over what hazily resembles a Vincent Van Gogh landscape in the background. But this is a golf game, not an art gallery....

To sign on, the guest goes thru a series of screens, before finding his little tee marker. Each is mouse driven with a ping! to signal acceptance of your choice. First, if you are too proud to play Bush Hill itself (a name possibly borrowed from baseball slang) you may click on Peppie Beach, Augusta National, or venerable old St. Andrews, great grandfather of all courses. The difference may not be immediately apparent to those of us who have not played these courses with regularity. A choice to practice putting or driving or to begin play, and a decision on whether to use the regular or pro tees (the latter at your peril) and you are quickly lead to the 1st tee marker of the course of your choice.

To the left and bottom of the course screen, with "you" pictured in your tweeds bent over the ball ready to whale the cover off, is the power-direction control panel on the left, and further choices on the bottom which permit you to aim left or right, choose a different club than your electronic caddy has selected for you, distance to the whole, a chance to see your score card, and even to click on "exit" and be gone for the day.

The motion of the golfer is quite realistic as he drives the ball out into the fall countryside with autumn-leaved trees on either side of the fairway, an occasional brook or stream blocking your way, and plenty of sand traps. We say, "...as he drives the ball...", actually, you click on the mouse, let go when the "power gauge" on the meter has risen to the height you deem appropriate, and then click on "hit line" exactly as the power gauge marker crosses it. If this is done properly the ball flies straight down the fairway, and you see it bounce several times before it comes to rest, a good 250 yards or more in front of you!

But should you be slow to react or jerk your shot by clicking too soon, a most bodacious hook or slice can

cause you to twist thru trees to the right or slant off out-of-bounds to the left. This is not a user-friendly course, this is MEAN 18. So if score is your game, you wisely decide to return to the driving range to learn how to get an armlock and a tight toehold on the power gauge. A quarter of an hour later, you are by no means Golden-Bear proficient, but at least ready to start again. The strategy, tactic or skill required is actually a combination of estimating distances as you try to control the power gauge to give you something above or below the average distance cited for the club you've selected club. When you couple that variable with the eye-finger coordination required to click on the gauge exactly at the right height and again instantly as it crosses the hit line, you find you are approaching something of the skill that it takes to play real golf, without having to climb in and out of your golf cart.

Be aware, all of this is coupled with the frustration of missing a shot, misjudging distance, using the wrong club, and constantly hooking or slicing into disastrous situations. However, should your ball actually arrive at the green, you are first given an aerial overview of the contour of the green and the location of the ball on it. A click and you move to a screen that still shows you the slope of the green, but with the man standing over the ball ready to drive it into the cup. Adjusting an aiming arrow with clicks of the mouse on the pointer ikon at the bottom of the screen, you try to point your ball squarely at the cup (this almost seems like cheating, until you try ten times in a row to sink a shot from 25 feet on the practice green). Once aimed, you go to your old friend, the power meter on the left side of the screen, where each bar of the meter tells you it will send the ball 8 feet, so you plot the strength of your stroke accordingly, the actual distance to the hole indicated at the bottom right. Again, if you click to putt too early or too late your ball will pass to the right or left of the cup, even if you have aimed it correctly (not always a snap from 69 feet away), and have executed the power stroke to perfection. So, as with the long game, putting requires practice, more practice, and plenty of patience.

Is that all? Well, if you don't count approaches, yes. Approaching the pin from a few feet off the green will try all of that required patience. The power gauge is barely up to height for, say, a 21 foot approach, and zoom! you have to snap the mouse instantly to avoid a dizzy hook, or a slice like a scythe to the left of the pin. This may well be the real test, the short game, the meanest part of MEAN 18.

Finally, once you have mastered the four courses, from both the regular and the pro tees (about 30-50 yards difference), there is a separate program which permits you to design your own meaner 18-hole golf course, hole



by hole, sand trap by sand trap. It is hard to imagine anything that might be tougher and still, so to speak, playable.

With all of that how does it play? Simply put, once you start, it may be later at night than you wished before you leave Bush Hill Country Club for your nights rest. It is tough. It is hard to score par, even with some practice, and each shot and each whole is a different challenge. If you are a golfer and a competitive one, chances are you will be easily hooked. (Pardon.)

Now, can the two simulations, LEADER BOARD, reviewed last month, and MEAN 18 be compared. Definitely. LEADER BOARD has sharper, more realistic graphics and sound, whether it is the noise of the ball banging off the tee, slashing thru trees, or cackling into the cup. The little golfer is also, simply put, better dressed (up close to the green, MEAN 18's golfer looks like someone on leave for the weekend from a Soviet Gulag.) So, you have for starters realistic versus impressionistic graphics, the latter having considerable appeal. The challenge is comparable, both are totally involving for the intense golfer, and for many who never saw the links. Putting on LEADER BOARD is a more satisfying experience, since it is graphically cleaner and sharper. But the tougher of the two is MEAN 18, if score is your game. A person who can consistently shoot under par on LEADER BOARD, will be lucky to shoot even par on MEAN 18. (LEADER BOARD has announced it will issue "Tournament Course" disks.)

For myself, a person who loves the outdoors and the sight of the white pellet soaring off the tee, I spend a lot of time on the links, and about three times as much honing my game on LEADER BOARD than MEAN 18, so my fellow Current Notes authors won't end up with all my money.

But when I want to smell a fall afternoon in the air, see the lazy colorful countryside and the leaves turning, I go for the heady, hard to equal, atmosphere of MEAN 18, where I know I won't score as well, but possibly will get more pleasure at a perfect drive or sinking a long put, because it is just that much "meaner" to do!

\*\*\*\*\*

TOURNAMENT DISK #1  
- LEADER BOARD GETS HARDER - Update -  
Reviewed by Frank Sommers

"David Ashby & Brent Ericson  
Access Software  
2561 S. 1560 W.  
Woods Cross, Utah 84087

"Dear Dave and Brent,

"Enclosed is a copy of Current Notes with the review of 'LEADER BOARD'.

"As you can see the East Coast crowd likes it. We had a Tri-State Labor Day Tournament, with each contestant putting Vitamin M (\$) in a hat, and going 36 holes for low score takes all. The winner was 24 under par!

"TOURNAMENT DISK #1', the new tournament level courses for 'LEADER BOARD' arrived yesterday. I have played the four courses, and find upon first try it adds about 6-8 strokes to your score per 18..... All in all, Brent, I would say you have exceeded your self with the added graphic touches.....

"I am including a review of 'MEAN 18' for your comparison, since they are your only apparent near competitor in the pro-Golf simulation software.

"Convinced that you have a winner here, that will have extra life as software goes and thus might be worth the time involved in improvements, I would like to make some suggestions that might be incorporated in 'TOURNAMENT DISK # 2.'

"\* To keep the challenge alive (its always there if your competing against other players, but for those just playing alone) I think the next tourney disks should be even more demanding. Brent, I don't think you have to make the course layout necessarily harder, but what about making the distances more demanding. Now, if you hit two reasonable 1 woods, and have developed skill in putting, you can too easily eagle the par 5's. Also you might stretch a par 4 here and there. The traps and water are fine, and require you to rethink the distance without addition of bounce and roll when either preface a green.... But the next disk could have a hole nearly surrounded by water, which if you go for it and miss, it would 'cost you'."

The above letter to Access Software finished by urging them to, "keep it ever more challenging". True, the new disk gives new life and added dimension to an already outstanding program; hopefully, Brent Erickson, it's ST author, will find time to continue the series. But I must have been out of my mind to urge him to make it "tougher". For others yes, but no longer for this individual. I just lost the first 36-hole match played on "TOURNAMENT DISK #1", Course #1, even though I was 6 under par. Your Current Notes Atari Resource columnist was 23 strokes under par!

See what I mean, Mr. Erickson. If the course had been harder, he wouldn't have beaten me as badly, would he?

Conclusion: "TOURNAMENT DISK #1" is a must for those lovers of "LEADER BOARD" who want to stay competitive and keep their names up there, where they can be seen by all, on the leader board.



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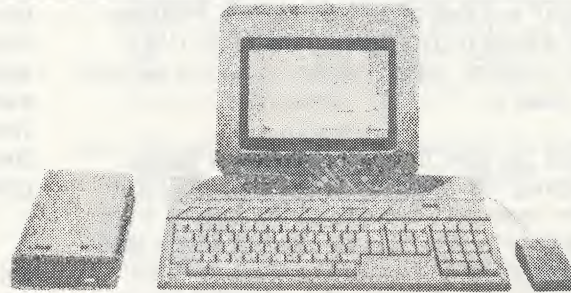
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S I L E N T   S E R V I C E   F O R   T H E   S T*Reviewed by Roger Abram*

With the recent release of the ST version of Silent Service, Microprose Software continues its tradition of quality programming for Atari Computers. This is Microprose's first ST program and with it they have already set one standard that other programs will hopefully follow: the game is not only playable on color systems, but like an old World War II movie in black and white, it runs on the monochrome monitor.

Silent Service puts you in command of a submarine in the Pacific Ocean between the years 1942-1944. There are three modes of play to choose from: Target Practice, Convoy Action Scenarios, and War Patrols. The first mode gets you started and lets you learn the controls before you get in too far over your head. The convoy scenarios place you in specific historical situations and you decide how to handle the Japanese warships. This is a good opportunity to practice some of the tactical maneuvers described in the manual. In the war patrols, you select one of five submarines and patrol the Pacific looking for Japanese vessels to attack. This is the most interesting mode since you never know what group of ships you will encounter. Sometimes you'll find an unescorted convoy and can just fire away until they're sunk. Other times you'll find that the relentless dropping of depth charges after the Kaibokans have found you will prove too much for your sub.

To aid you in your mission, the submarine has six battle stations: Map, Bridge, Periscope/Binoculars, Instruments and Gauges, and Damage Reports. Another screen, Quartermaster's Log, lets you view the total number of ships/tonnage you have sunk on the current mission. A Submariner's Hall of Fame is kept on the disk and your patrol is rated on several factors including tonnage sunk and difficulty level. The first five rankings are of actual submarines in actual war periods. Can you top them?

There are two ways to move between each battle station. Tapping the space bar or clicking the right button on the mouse will take you to the conning tower screen where the "Captain" can be directed to the spot where another station is located. A click of either mouse button will then bring up the appropriate screen. A faster way is to use the function keys. Each station is assigned a function key and you can bypass the conning tower by using this method. I noticed a lag in response time when loading screens in the monochrome version so I use the functions keys exclusively.

As your experience grows, you can increase the difficulty level of the game by controlling certain variables: limited visibility, convoy zig-zags, dud torpedoes, expert destroyers, convoy search, angle-on-bow input, and port repairs only. By toggling these factors on or off, even the preset convoy scenarios can have almost infinite variety.

The game has all the features of its 8-bit predecessor with some extras thrown in for the ST user. At the bottom of the screen you will find icons to control the following with the mouse: sub control (direction and depth), speed (including reverse engine), in and out zoom for the map mode, deck gun and torpedo firing, periscope movement, and time scaling. In addition, when an enemy ship is sighted, you can click on the target identification box and the type of ship and tonnage will appear. These icons make the simulation easier to use and results in quicker responses since you don't have to continually glance up and down at the keyboard. If you prefer using the keyboard, the same keys control these features as they did in the 8-bit version.

For the ST, a seventh convoy scenario has been added, "Cavalla Hits the Jackpot (Commander H.J. Kossler)." Its June 19, 1944 and a group of Japanese warships is approaching directly towards you at high speed. The convoy includes two cruisers and an aircraft carrier, the "Shokaku." All you have to do is sit tight, fire a few quick ones at the carrier, and then dive down to 400 feet and wait for the depth charges. Maybe now would be a good time to release debris and oil and try to fool the enemy into thinking you're down at the bottom for good. Perhaps you'll succeed in your mission and recreate Commander Kossler's sinking of the "Shokaku," which was used in the attack on Pearl Harbor.

Graphics and sound have been enhanced for the ST but both suffer from minor distractions. The program tries to create the illusion of waves/wakes in the water by having squiggly little lines below the horizon. It looks terrible. Can you imagine a child beating on an aluminum trashcan lid with a stick? That is what it sounds like when a Japanese warship is maneuvering above your submerged ship. It gets so loud that you'll find yourself reaching for the volume control. Other than these small annoyances, the simulation looks and sounds great.

All in all, Silent Service is an excellent program and a definite must for any collection. Its attention to detail, from the sound of your surfaced sub slicing through the water, to the playing tips and historical information found in the Tactical Operations Manual, make this a well-conceived and well-executed piece of programming.

The game will work with or without TOS in ROM and with either monitor. The disk is copy protected but you can purchase a backup disk for \$10.00 when you mail in your warranty card. Microprose has an upgrade policy for owners of the 8-bit version who would like to acquire the program for the ST. Send in your original disk and instruction booklet, along with \$22.50, to Microprose Software, 120 Lakefront Drive, Hunt Valley, MD, 21030.



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CURRENT NOTES ST LIBRARY

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Order disks from Current Notes, 122 N. Johnson Rd., Sterling, VA 22170. All disks are \$4. Add \$1 for postage and handling for every 6 disks ordered. New ST Clubs: Feel free to draw on the CURRENT NOTES Library to build your own ST disk library. NOTE: Current Notes library disks are also available at NOVATART, and NCAUG meetings as well as at ACA, L&Y, and Computer Service Land.

- #1 MONOCHROME SLIDE SHOW No. 1
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- #28 DBMAN TUTORIAL and MAILING LIST
- #29 MICROEMACS (VERSION 3.7) <----- NEW This is the Atari ST edition of microemacs. Ver 3.7 has the same basic commands as the previous release, but it also contains a plethora of enhancements.
- #30 UTILITY DISK #2
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- #39 ARCADE DEMOS
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- #41 TINY COLOR SLIDES NO. 2
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- #45 ATARI USER GROUP DIRECTORY
- #46 GEM QUESTION & ANSWER BULLETIN (FEB-JUN)
- #47 INSOF MAGAZINE, AUGUST 1986
- #48 TINY MONOCHROME SLIDES NO. 1
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  - #72 UTILITY DISK NO. 4. Format and copy disks with 400K and 800K; LIBRARY.PRG and DELIBRAR.PRG - combine related files for uploading and then separate them; PROFF with manual on disk; MAKE512 and MAKE1MEG alter RAM size in 1 meg machine; MUSCNVRT converts Amiga Music Studio files to ST; 5 desk ACC including MichTron's shareware "DESKMAN" and more...
  - #73 UTILITY DISK NO. 5. Another PD terminal program BMODEM; disk drive speed checker; another disk librarian program; and more ...
  - #74 ST SAMPLER NO. 1. SOLAPAK demo; General Ledger demo; Techmate Chess demo; Bingo Card Tracker; DBMAN CMD file debugger and variable cross-reference (only debugs files of 75 lines or less).
  - #75 TINY COLOR SLIDES NO. 7. 18 pictures from PRINT-TECHNIK demo disk CAPITAL, CAR, CARDDAME, CARDKING, CT MAG, EIFEL, FL PFERD, GIRL6, GIRL8, GOHORSE, JACKSIG, MOONASTR, PFERDE, SCHADMA, TINA, TRAIN plus TINY prgs.
  - #76\* PRINT-TECHNIK SOUND DIGITIZER DEMO. Example of capabilities offered by the PRINT-TECHNIK sound digitizer. Requires 1040 with color monitor.
  - #77 CAD 3D ANIMATION DEMO. From ANTIC, demo shows animation possible using CAD 3D animation program.
- \* Requires 1040ST or one meg.



[Note: the information below is provided by and is the responsibility of each individual club. If you would like to become a member of one of the WAACE clubs, follow the directions provided for that club and send your dues to the appropriate club treasurer. If you are receiving Current Notes as a member of one of the clubs and have a question about your subscription, contact your club representative.]

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Meetings 1st Thursday, 7:00 pm (Library Activities), 7:30-9:00 pm (Program) in the Temple Israel Social Hall. Temple Israel is located in Silver Spring, at 420 E. University Blvd, between Colesville Rd (Route 29) and Piney Branch Rd (Route 320). Membership Dues are \$15/year which includes a subscription to Current Notes. You may join at any meeting or by mailing your check, payable to AURA, to Treasurer, AURA, PO Box 7761, Silver Spring, MD 20907.

Vice-President's Report  
 by W. Williams Schadt

Due to religious holidays in October, there will be no AURA meeting in October, and the November meeting will be on the SECOND Thursday, November 13. Mark your calendar now!

A complete Atari 520ST system, including a Citizen 120D printer, 60 disks, and an assortment of software, was presented to the Cannon Road Elementary School at the AURA meeting on September 4. Monies remaining from the May Atarifest were used to support the purchase of this gift and expand Atari exposure in the local school system. Mrs. Nancy Douglas, principal of the school, graciously accepted the system and thanked the members of AURA and everyone who contributed to or attended the Atarifest.

The Personal Computing Association at the University of Maryland is sponsoring Computerfest '86 on October 25 from 9:30 am to 5 pm in the Adele Stamp Union Building. Members of AURA are requested to volunteer some time so that the AURA Library table will be well supplied with Atari users. Please contact Bill Schadt, John Barnes or Rick Kellogg soon if you could help with this effort. Rick has his hands full as a freshman at Maryland, and the Library team will need some relief and help.

The second annual Atarifest in Northern Virginia is scheduled for Saturday, Nov. 8. The reports from previous events were great, and this one should be even better. AURA members are going to be involved in an AURA Library table and special topic sessions related to personal productivity, so we also need help from the membership for this event. If you use any of the word processors, spread sheets or data base systems on either the 8 bit or the ST computers, why not volunteer to be there to present some short demos and to answer questions. The success of these events is directly related to the efforts of the volunteers.

Nominations for new AURA officers are to be presented at the Nov. meeting. So far, the list of persons volunteering to serve as officers is very, very slim

(one" maybe"). Fresh blood in the ranks of the AURA officers is needed if you want AURA to serve your needs, grow, and expand. AURA has improved dramatically in the past few years, let's keep it going in the right direction.

A special presentation has been arranged for the Nov. AURA meeting. One of the authors of ANSIGRAPH from Grafikon, Ltd. will be presenting a demo of the program and discussing the features of this terminal program for the ST which can emulate five different terminals: ANSI x3.64, VT52, VT102 and Tektronix 4014. If you want to know more about ANSIGRAPH, read the article on page 46 of the September Issue of Current Notes and then come to the Nov. meeting. The second part of the meeting will be devoted to terminal emulation programs on the 8 bit Ataris.

REMEMBER: Computerfest on October 25, Atarifest on Nov. 8, and AURA meeting on Nov. 13.

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Meetings 4th Tuesday, 6:30 pm, Meeting Room at the Public Library in Oxon Hill, Maryland. Library is located near the Woodrow Wilson Bridge just off the Washington beltway. From Virginia via the Woodrow Wilson Bridge, stay on the beltway to Maryland exit #4 West (St. Barnabas Road). St. Barnabas Road merges with Oxon Hill Rd. (right turn at end of exit ramp); proceed 1/4 mile and Library will be on your left.

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Meetings 4th Tuesday, 7 - 9:30 pm, Walkersville H. S., MD Route 194, 1 mile north of MD Route 26 (Liberty Road). Membership Dues are \$20/year/family. Join at meeting or send check, payable to FACE, to Buddy Smallwood, P.O. Box 300, Keedysville, MD 21756.

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Meetings 3rd Tuesday, 5:30 - 8:30 pm, room 543, National Science Foundation offices, 1800 G St., NW, Washington, DC. Closest subway stop is Farragut West on the Blue and Orange lines. Building is identified by sign for Madison National Bank on the corner. Front entrance is on west side of 18th between F and G. Membership Dues are \$15/year. New members may join at meeting or send check,



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\*\* Please do not call after 10 PM EDT \*\*

Meetings: 2nd Sunday, 5:30-9:00 pm, Washington Gas Light Building, 6801 Industrial Road, Springfield, VA. Take 495 to East on Braddock (620) to South on Backlick (617). Left on Industrial Road (by a light with a Texaco station on the corner). Washington Gas Light is the second building on the right (big parking lot, go right in front door). Membership Dues are \$15/year. Join at the main meeting, any chapter or SIG meeting, or by sending check, payable to NOVATARI, to Earl Lilley, 821 Ninovan Road SE, Vienna, VA 22180.

Novatari Chapter Meetings

BURKE, 3rd SUN, 7:30-9:30, Oaks Community Center, Ray Cwaitha 250-3856.

GREENBRIAR, 4th WED, 7:30-9:30, 4112 Majestic Lane, Greenbriar, Jim Stevenson 378-4093.

MT VERNON/HYBLA VALLEY, 1st THR, 7:30, Ron Peters 780-0963.

RESTON, 1st WED, 7-9, Reston Library, Bob Zimmon 476-5924.

STERLING, 1st THR, 7:30-9:30, Sterling Park Community Center, Palmer Pyle 437-3883.

VIENNA, 3rd WED, 7:30-9:30, Rm 32, Vienna Elementary School, Dave Heagy 281-9226.

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NOVATARI MAIN MEETING ---- October 12th

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Big Auditorium	Small Auditorium
5:30-6:00 BEGINNER'S SIG	TELECOM SIG
6:00-7:00 Main Program:	- empty -

\* \* Disk Publications, Inc. -- The New Aladdin \* \*

7:00-7:30 Business Meeting	- empty -
7:30-8:30 - to be announced -	ST SIG Meeting

Note: ST SIG also meets at Washington Gas Light from 6:30 - 9:30 on the fourth Sunday of the month (26th).

President's Report  
by Ed Seward

I'm going to start off this month by thanking Bill Holt of Broderbund for his very interesting talk and visit with us at our September meeting. Both 8-bit and 16-bit

owners should be happy. Broderbund plans to continue its support of the 8-bit line and hopes to introduce two products for the ST in time for the Christmas season. (One being a graphic arts program and the other an animator.) For the 8-bit line there are no plans at present to take advantage of the increased memory in the XE 130's and compatibles.

Please note the change in the agenda for the monthly meetings. We are moving the time slot for our main program up to 6:00. SIGs will meet in both auditoriums from 5:30 to 6:00. At that point everyone will move to the main auditorium for the guest speaker. Any relevant club business and the door prizes will be given out after the main program. The time from 7:30 on is once more available for SIG meetings. The ST SIG will meet in the small auditorium. At the moment nothing is scheduled at 7:30 in the large auditorium. There was some thought to using that period to demonstrate new 8-bit software or hold tutorial/programs to demo 8-bit application programs. Give me your comments at the meeting.

Joe Waters and his assistants are continuing to make great progress on ATARIFEST (November 8, 1986 from 10 AM to 3 PM). Along those lines there will be two art contests at the ATARIFEST - one for 8-bit and another for 16-bit machines. To participate please bring a print out of the picture and a diskette with the file or files you are entering. ALL work must be ones you developed from scratch and must be placed in the public domain. There will be a prize for each contest. The popular entries will be placed on disks so that clubs can include them in their disk libraries. Thanks go to Bill Frye of AURA for coming up with the idea and for his willingness to run this event. Let's see your artwork and showcase the talent present in the WAACE clubs.

We are in the process of setting up another SIG -- name yet to be decided upon. This SIG is for those HAM radio enthusiasts that also have Atari computers. If you are interested please contact me (Ed Seward) or Ron Peters and speak up if you would be interested in running this SIG.

Three reminders. The speaker at the October meeting will be Disk Publications Inc on their New Aladdin non-technical magazine on a disk. Secondly, there will be no main meeting in November, and finally, the Second Annual Northern Virginia ATARIFEST is November 8th from 10 to 3.

=====

VAST: Virginia ST

President..... Joe Kuffner.... (703) 759-2507  
 Demo Volunteers.. Evan Wallace... (703) 620-9144  
 Disk Librarian... Allen Clarke... (703) 250-4469  
 Equipment Coord.. Ian Charters... (703) 845-7576  
 Public Relations. Gary Scott..... (703) 590-1906  
 MIDI Keyboard.... Mike Lehr..... (703) 931-9947  
 Programmer's SIG. Ken Whitesell.. (301) 636-4756  
 WAACE ST BBS..... (703) 569-3227

IMPORTANT NOTE: NEW MEETING TIMES! The VaST meets on the second and fourth Sunday of each month (October 12 and 26) in the Washington Gas & Light Building (see NOVATARI report for directions). Meeting times as follows:

Second Sunday: 7:30 until 9:30 in small auditorium  
 Fourth Sunday: Programmer's SIG 5:30 until 6:30  
 VaST 6:30 until 9:30







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WHEN? Saturday, November 8th, 1986

WHERE? Fairfax High School

The Fairfax County Office of Adult and Community Education, NOVATARI and WAACE are teaming up to surpass last year's Northern Virginia Atari exposition. And surpass we shall! Not with mirrors, nor with magic... but with good old hard work and Atari-type enthusiasm. See the very latest in new Atari computers and programs. Special rooms will be available for seminars and workshops dedicated to word-processing, databases and spreadsheets, telecommunications, languages, games, music...you name it, we'll have it! We hope to have interesting guest speaker(s) and there will be door prizes galore! Come one...Come all, bring your family and any friends interested in things Atari.

SEE YOU THERE!!!